DARLINGTON NEW NUCLEAR POWER PLANT PROJECT

JOINT REVIEW PANEL

PROJET DE NOUVELLE CENTRALE NUCLÉAIRE DE DARLINGTON

LA COMMISSION D'EXAMEN CONJOINT

HEARING HELD AT

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1685 Bloor Street
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Monday, March 21, 2011

Volume 1
REVISED

JOINT REVIEW PANEL

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ERRATA

Transcript :

Page 72, lines 17 and 19

17 --- RESPONSES FROM OPG BY MR. STEVEN GARROD:
18 MR. GARROD: Thank you, Mr.
19 Chairman. Steven Garrod, for the record.

Should have read:

17 --- RESPONSES FROM OPG BY MR. STEPHEN GARROD:
18 MR. GARROD: Thank you, Mr.
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Page 76, lines 15 and 20

15 stages of this approval's process. This approval's
16 process is precautionary and adaptive.
17 The panel will hear from OPG
18 during the course of this hearing that it will take
20 almost a decade before this project has completed
21 the approval's process and is operational.

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Page 77, line 4

4 beginning of the approval's process when there is

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Page 80, line 21

21 on these future approval's processes. As the CNSC

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Page 140, line 17

17 (inaudible) over $27 billion in assets owned by the

Should have read:

17 the steward of over $27 billion in assets owned by
18 the

Page 142, line 13

13 with current install capacity. The province

Should have read:

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Page 144, line 9

9 designate an engineer procurement and construction

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Page 181, line 22

22 regulatory expectations of the CSNC as well as the

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22 regulatory expectations of the CNSC as well as the

Page 188, line 21

21 the lake and fill to the two-metre contour. If we

Should have read:

21 the lake infill to the two-metre contour. If we

Page 196, line 19

19 natural conduction of a fluid that is initiated

Should have read:

19 natural convection of a fluid that is initiated

Page 197, 3 to 21

3 Just a moment. I will –- so, for
4 instance, in case of the enhanced CANDU 6, there is
5 gravity injection to the primary heat transport
6 system following a loss of coolant accident. As a
7 backup to the emergency –- emergency core cooling
8 system failure, there's a gravity-fed water supply
9 to the containment providing a spray. In the event
10 of a severe accident, that helps to reduce
11 containment pressure. There's a gravity injection
12 of –- to the steam generators, which is a secondary
13 side cooling system, and in the event that the
14 active system which normally supplies that in the
15 event of an emergency, in case that fails, there's
16 make-up water to the calandria in the calandria
17 vault provided by this overhead reserve water tank.
18 In the case of the enhanced CANDU 6, that, in the
19 case of a severe accident, can be –- supply water
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10 of a severe accident, that helps to reduce
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secondary side cooling system, and in the event that the active system which normally supplies that in the event of an emergency, in case that fails, there's make-up water to the calandria in the caladria vault provided by this overhead reserve water tank. In the case of the enhanced CANDU 6, that, in the case of a severe accident, can be used to supply water to these –- these safety features. These are just a subset of passive features.

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Courtice, Ontario

--- Upon commencing on Monday, March 21, 2011 at 1:30 p.m.

CHAIRPERSON GRAHAM: Good afternoon, ladies and gentlemen and welcome to the first round of the hearings that have been scheduled here today.

I guess before beginning, we wish to acknowledge the tragic and complex events that have unfolded in Japan. Our thoughts are with all those involved in Japan's recovery.

Should the hearing proceed following consideration of this afternoon's motions; I will make a formal statement at seven o'clock tonight when we start the evening session.

So in starting, I will turn to one of my co-managers to read in opening remarks.

--- OPENING REMARKS:

MS. MYLES: Good afternoon everyone, my name is Debra Myles and I'm the Co-manager for the Joint Review Panel.

The Joint Review Panel is about to begin a public session for the consideration of the three requests for procedural matters that were

received by the deadline that was set by the Panel of March 14th, 2011. They will also be considering and hearing procedural matters that were submitted today.

We will have simultaneous translation at this session and throughout the hearing. It's available in French on channel two and English is on channel one. So I'll ask you to please keep your pace of speech relatively slow so the translators can keep up.

And also to make the transcripts as meaningful as possible, to help the transcribers, please identify yourself before you speak.

A written transcript is being created for these proceedings and all of the proceedings and it will reflect the official language used by the speaker. The transcripts and audio recordings will be posted on the Canadian Environmental Assessment Registry internet site for the project.

I'd also like to note that this session is being video webcasted and that the webcast can be accessed through the website of the Canadian Nuclear Safety Commission.

As a courtesy to everyone in the room, please silence your cell phones and other electronic devices now and for the duration of the hearing.

Thank you.

Mr. Graham?

CHAIRPERSON GRAHAM: Thank you very much.

Good afternoon and welcome to the preliminary session of the Joint Review Panel for the Darlington Nuclear Power Plant Project.

My name is Alan Graham and I am the Chair of the Panel today. I would like to begin by introducing the other Panel members. And I'll start with, on my right, Madame Jocelyne Beaudet and on my left Mr. Ken Pereira.

We have heard from Debra Myles, the Panel's Co-manager. And we also have Denis Saumure, counsel for the Panel with us on the stage also, on the podium.

We're here this afternoon to consider the request for consideration of preliminary matters raised by three parties. We will also address the request received last week regarding the adjournment of the proceedings and as

of just this afternoon, in addition today, we have received additional requests.

One from the Lake Ontario Waterkeepers, which I believe is just additional information which will be permitted to be included in their summation today.

And also from Chai Kavelor, I believe I have that name correct, and Mr. Peter Tabuns. Both of these were late, they didn't meet the rules but in the fairness of the hearing that is going on here today, we will propose to have a brief summary from both of these people.

We are allowing time for the ones that have followed the rules but we realize that we want to keep this as informal as possible. And we will let -- give some time for these two interveners to make a statement which as I say, hope will be concise and to the point and maybe five to 10 minutes, if that's fair, because they didn't meet the rules but we do want to demonstrate that.

So we will proceed. And I will get my co-manager to read the following statement.

--- PROCEDURAL MATTERS BY MS. MYLES:

MS. MYLES: Just the

administration on how we are going to proceed here.

As Mr. Graham has already outlined, we'll be first hearing the written submissions received by Lake Ontario Waterkeeper, the Canadian Environmental Law Association and North Watch.

Though each of the three requestors will be given an opportunity to present their request, Ontario Power Generation will then be provided with an opportunity to address each of the requests.

In light of the time constraints this afternoon, the Joint Review Panel will have -- alone will have the opportunity to ask questions for clarification on these requests.

When the panel's questions are complete, each presenter will then be offered an opportunity to make a brief reply.

Requestors are asked to keep their presentation to a maximum of 20 minutes and to keep their final reply to not more than 10 minutes.

Ontario Power Generation, which I should point out, is here to the -- sitting at the tables to the right of the panel, will be allowed 10 minutes to respond to each of the presentations.

The panel is then expected to adjourn and they will consider these matters. Mr. Graham will provide further information on that at the end of this session.

CHAIRPERSON GRAHAM: Thank you, Debra.

We'll now hear from Lake Ontario Waterkeepers as outlined in their letter to the panel dated March 14th, 2001 and also as I mentioned to the additional document received this morning. And I believe that's titled, "Submission of Lake Ontario Waterkeepers on the preliminary issue." We'll hear both those today.

And I believe Mr. Mattson, you're representing Ontario Waterkeepers and the floor is yours and you have 20 minutes.

Thank you very much.

---PRESENTATION FROM LAKE ONTARIO WATERKEEPERS BY MR. MARK MATTSON:

MR. MATTSON: Thank you very much, Mr. Chairman and thank you very much for the kind words on behalf of all of us in the room with regard to the tragedy occurring in Japan.

My name is Mark Mattson, I'm counsel for Lake Ontario Waterkeeper and president

of Lake Ontario Waterkeeper and I'm joined here by counsel for Lake Ontario Waterkeeper, Joanna Bull.

The presentation that we sent the panel this morning is really an outline of what I intend to say this morning.

Mr. Chairman, we're all here as -- from Lake Ontario Waterkeeper and many of the other public interest interveners, as part of the *Canadian Environmental Assessment Act* legislation and the *Nuclear Commission Safety Act* and the Rules of Procedures as are contained in those two pieces of legislation.

And for the past two years, we've been abiding by those rules and regulations in preparing evidence for this hearing.

We believe this is the most important hearing -- environmental assessment hearing into nuclear power in Canada because in my estimation this is the very first time we've had the opportunity in Canada to have a public hearing process for a new nuclear power plant.

So thank you for that and I think I'm very proud to be the first one to speak here today on that issue.

We do have a preliminary issue and

our argument is that we we're seeking an adjournment of the hearing until such time as the record before the panel is complete and the public's been given adequate time to review and respond to the complete record.

So what is a preliminary issue? We note in our argument in *Berger vs. Liberty Mutual Insurance* that a preliminary issue is one where a decision on the preliminary issue could determine the entire outcome and the decision is prepatory to or in advance of the main decision.

Our argument, Mr. Chairman and Members of the Joint Panel, is that a lack of detailed and complete information in the Proponent's case is certainly a preliminary issue to an environmental assessment hearing and it must be addressed before this hearing proceeds.

So what's missing? Too much information is missing, Mr. Chairman. The panel does not have enough information before it on which to base an environmental assessment or a licensing hearing, the two decisions you need to make.

The missing information is fundamental to the panel's ability to make a decision on the hearing and it includes but is not

limited to the following: the choice of a nuclear reactor; the choice of cooling water technology; mass loading calculations for contaminate emissions; identification of anticipated contaminate emissions, including blasting-related contaminants, liquid radioactive waste, steam generator blow-down, biocides, lake fill material, sewage, impingement and entrainment data for various cooling water technology options; air modeling that accounts for stable onshore flow regimes caused by proximity to Lake Ontario; consideration of possible subsidence and induced seismicity due to the blasting at the adjacent St. Marys Cement quarry; plans for erosion control during the preparation and construction; plans for storm water management during preparation and constructions, plans for dealing with existing wastes or contaminated soils; construction waste management plans; an environmental management plan; an environment protection plan for handling storage and disposal of fuel, oil, solvents and lubricants; a spill response plan; groundwater surface water and storm water quality monitoring plans; contingency plans to protect the environment in case of emergencies; a comprehensive follow-up

plan; a cumulative environmental effects of the Darlington new nuclear power plant in conjunction with the existing Darlington Nuclear Power Plant, the new Durham incinerator and the St. Marys Cement and other nearby facilities and pollution sources.

OPG's review of the initial lessons learned from the Japan crisis, particularly as it relates to the adjacent Darlington Nuclear Power Plant and OPG's report on implementation plans for short and long-term measures to address any significant gaps with the existing adjacent Darlington Nuclear Power Plant.

And because of this missing information, Mr. Chairman, the potential environmental effects of the Darlington new nuclear power plant are unknown.

Now, you know we've had five experts who've been retained to review this material and if our preliminary motion is not accepted, our experts will be raising this again in their evidence and noting that this information is missing.

We do not know the pathways for contaminants and we do not know what contaminants will be released into the environment or in what

qualities or in what concentrations and we do not have accurate air modeling for a power plant located on the Great Lake.

We do not know the impacts or construction operation on fish and fish habitat and we've not yet learned any lessons from Japan regarding the potential environmental effects of power failures and other emergencies. Just too much information is missing.

Now, OPG openly acknowledges that important information is missing, but they're relying on the plant perimeter envelope or bounding approach to say that they don't need to bring detailed information to the table.

And while that approach may work with respect to licensing hearings, it cannot work for an environmental assessment hearing.

A bounding approach may be appropriate for licensing when the Proponent returns to the regulator for new approvals at key stages in the project, but this is not the case for an environmental assessment review.

The EA is the one and only review of the environmental effects of the project. The EA must protect the environment for the next

century. Even the report commissioned by you, the panel, the Pacific Northwest Laboratory OPG's assessment of cooling water towers, condensing cooling February 2011 says that exact point.

PNML's understanding of the purpose of the PPE approach, the plant perimeter envelope, based on experience with applications in the United States is to allow an early site permit applicant to defer the selection of the reactor design until the next stage of licensing rather than to use it as a basis for determining the environmental appropriateness of any given design.

So while it might be appropriate, and we don't agree necessarily it is for licensing, it certainly is not part of Canada's law to allow it to do it later and it certainly isn't an approach used either in the United States as per your own expert's report.

And even if the panel does accept the bounding scenario can be used for an environmental assessment, this bounding scenario is not an accurate representation of the environmental effects of the Darlington new nuclear power plant.

For example -- and the letter is in the back of our submissions.

"OPG's addition of the CANDU 6 at the end of the comment period means that this reactor technology was not considered in the environmental impact statement or by the public."

According to OPG, tritium emissions from the CANDU 6 will be significantly higher than the maximum emissions considered in the plant perimeter envelope. OPG's August 17, 2010 letter to the panel states that while the EIS considered tritium emissions at 14,000 TBA per liquid and 480 TBQ for gas, the CANDU 6 reactors would emit 16,000 TBQA and 980 TBQA. That would mean the tritium emissions from the CANDU 6 cannot be addressed by any of the work done in the bounding analysis and were not considered in the environmental impact statement. Therefore, not giving notice to the public and no review.

So the addition of the CANDU 6 means that the bounding approach taken is not an accurate representation of the maximum environmental impacts.

Moving on to the Japan crisis

which unfortunately has been seen particularly by the Minister of Energy in Ontario as something that we're raising for political purposes, and I want to say right here, it's not being raised for those purposes whatsoever.

We are a charity, a public interest organization, and we take this very seriously.

And I note that so do other people in the industry, including the President of OPG and the Canadian Nuclear Safety Commission.

As a result of the accident, the CNSC is reviewing safety cases for all of Canada's nuclear facilities as is a normal practice when events occur. The CNSC is actively monitoring events in Japan and will work with its colleagues, the IAEA and take into account relevant lessons learned for implications on Canadian facilities.

As I say, Tom Mitchell, President and CEO of OPG wrote in the Toronto Star that:

> "The nuclear industry is known for its capacity to learn and evolve. The electricity blackout in 2003 showed that our nuclear

> reactors needed improved backup systems. These have been put in place. In the nuclear industry we're proud of our safety record, but we are not complacent. The tragedy in Japan will stimulate all of us to review the designs of our reactors and our operating procedures to maximize our stress on safety."

Waterkeeper agrees with OPG and CNSC's desire to identify and take into account relevant lessons learned from Japan when assessing the Darlington new nuclear power plant.

The assessment of a new nuclear facility in Ontario would be incomplete and insufficient if it did not include lessons from the nuclear crisis in Japan.

However, we disagree that the suggestion that relevant fact lessons from Japan can be considered beginning today, for several reasons, including but not limited to the following:

The panel cannot conduct a complete assessment without considering the relevant lessons from the Japan crisis. Those lessons have not yet been identified and, as a result, those lessons are available to neither the panel nor the public.

Our request is based on both procedural concerns and on a sincere desire to ensure that the environmental assessment and the licensing process lead to appropriate and informed decision making.

This is a quasi-judicial process, it is not possible to consider the events in Japan before verifiable and complete evidence regarding those events and it is not possible to consider without providing that information to the intervenors for review and further submissions.

And I make those arguments not in a vacuum.

I turn to the Canadian Environmental Assessment for leadership on why I say that. According to Section 34 of the *Canadian Environmental Assessment Act*, the Review Panel must:

"...ensure that the

information required for an assessment by a review panel is obtained and made available to the public."

As the panel will now be considering new and evolving information from Japan, this information must be collected and made available to the public.

Further, the public must then have the opportunity to review and respond to the new information in accordance with the common-law and rules of procedural fairness.

The public must have the information. Section 34A of the *Canadian Environmental Assessment* says the panel is required to ensure the information is available by the Review Panel and is obtained and made available to the public. The EIS, the environmental impact statement; therefore, should provide enough detailed and reliable information to allow the panel to fully understand, consider and render a decision on all the points enumerated in Section 16 of the *Canadian Environmental Assessment Act* and I won't go through all those sections but we want to make the point why we're here.

This is a hearing. It's not two sides battling it out with an adjudicator to decide who is right or wrong, but it is rather a test of all the evidence we can and arrive at the best possible decision.

No one, OPG, the CNSC, the public intervenors can stand here today and know what the right decision will be; nor can we. We're going to discover that through the process of this environmental assessment hearing and the public needs the information and the panel needs the public's responses for that information to make it proper.

Next, this panel cannot hold the environmental assessment or licensing hearing without its own complete set of information and again, without this information it would be unreasonable for the panel to reach an environmental assessment decision regarding the proposal.

So we talked about the public; now, the panel. The purpose of the Act is listed in *Canadian Environmental Assessment Act* Section 4:

> "To ensure that the projects are considered in a careful

and precautionary manner before federal authorities take action in connection with them in order to ensure that such projects do not cause significant environmental effects."

And under Section 16 of CEAA:

"Every assessment review by a review panel must include (not may must include) a consideration of the environmental effects of the project, including the effects of malfunctions or accidents and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have or will be carried out, the significance of those environmental effects, public comments, feasible measures to mitigate any

> adverse environmental effects, the purpose of the project, alternative means of carrying out the project and the environmental effects of those alternatives, the need for and requirements of any follow-up programs, the capacity of renewable resources that are likely to be significantly affected by the project and any other matter that the responsible authority or Minister requires considered such as the need."

The case law supports the need for a complete record. In *Athabasca Chipewyan First Nation vs. British Columbia Hydro and Power Authority*, the Federal Court of Appeal found that the Applicant for a permit or approval must provide the decision-maker with sufficient evidence and information to enable the decision-maker to reach a decision. The Court said:

> "One interpretation of this

finding is that the Board placed the burden on the intervenors to demonstrate adverse environmental impacts. If the Board purported to do so, it was wrong. The Applicant (that's OPG) for the permit must provide the Board with sufficient information to enable to Board to make its decision."

If this panel makes a decision without full and sufficient information before it on every point listed in Section 16 of the CEAA, the decision can be and will be vulnerable to review.

So in summary, this environmental assessment is the one chance we have to get the decision right. Unlike the licensing decision, we have one EA for the life of the plant.

The crisis in Japan underscores that we cannot afford to learn from our mistakes. We must take the precautionary route and make decisions based on facts. This panel does not have

the facts it needs to make a decision.

We respectfully submit that this hearing cannot go ahead without the information that is missing. OPG should undertake to complete the record.

The hearing should be adjourned to give them time to do this and to give the public time to review all the new information and only then can a fulsome environmental assessment proceed. One that accounts for precaution, is protective of the environment, and one that doesn't set us up to learn from our mistakes.

Thank you very much, Mr. Chairman. Those are my submissions.

CHAIRPERSON GRAHAM: Thank you very much, Mr. Mattson.

We'll now turn to Ontario Power Generation. And I believe Ms. Swami, you're the lead on this presentation; do you have comments?

MR. SWEETNAM: Good afternoon, Mr. Chair, Panel Members Beaudet and Pereira.

For the record, my name is Albert Sweetnam. I'm the Executive Vice-President for the Darlington new build. I'm the Project Manager for the new build project. With me today are Ms. Swami

and Mr. Steven Garrod.

Just a question, Mr. Chair; we understand that there are a series of intervenors that will be speaking on the same subject. Would it be appropriate to hear all of them and then have us respond or do we respond individually to the same subject three times?

CHAIRPERSON GRAHAM: Well, I'm sure that when an intervenor is before us with a motion like we have today that my colleagues, both Panel Members, are going to have direct questions and we thought that we would segregate them because really there are several different issues.

So we're wondering, this issue that was brought up by Lake Ontario Waterkeepers, I believe, it's been quite detailed and we're wondering if you'd rather not answer -- that's your prerogative -- until the end, but we'd like to deal with each subject as we go along because we have to render a decision on each subject, on each matter as we go along and we'll have to do that in due course.

So I guess we'd like to hear from you, but if you're not -- if you only would like to do it at the end that's your prerogative.

MR. SWEETNAM: Thank you, Mr. Chair. Albert Sweetnam, for the record.

OPG has performed an EA that is appropriate for this stage of the project. I will ask Mr. Garrod to address this procedural concern.

MR. GARROD: Thank you, Mr. Sweetnam.

Mr. Chairman, Members of the panel, my name is Steven Garrod, for the record it is spelled G-A-R-R-O-D.

I've been asked by OPG to respond to this procedural issue. I want to do this in an efficient fashion and many of my remarks will be applicable to the motions by all three intervenors so I will try not to be repetitive.

CHAIRPERSON GRAHAM: As I said, sir, not to interrupt, but as I said, if you would rather wait until the end, that's your prerogative.

So I mean it's entirely up to -- being here today so you can -- if you'd rather wait, we're not forcing you to do it. You can either wait or do each one individually. So it's whatever your decision is.

MR. SWEETNAM: Thank you, Mr. Chairman.

I think that primarily my interest would be to assist the panel in the most efficient way possible.

I do believe it would be more efficient and of more assistance if I withheld my remarks until all of the intervenors had spoken on the adjournment requests.

If there are other requests that are different, for example, about clarification or modification of the panel's rules of procedure, I'd be happy to deal with those separately.

But I think we have adjournment requests here on these same issues by all three intervenors and it would be more efficient and I think of more assistance to the panel if we heard from all three of them and then I spoke.

MR. MATTSON: Mr. Chairman, can I just -- we've raised a preliminary issue, not a procedural issue. It may be procedural, but it's very different and my friend just started his argument that we all are raising procedural issues so I think maybe my friend might want to address the preliminary issue we're addressing and not jump to the procedural issues.

Thank you.

CHAIRPERSON GRAHAM: Okay with that then if that's the prerogative of OPG, I'll turn to my panel colleagues for their round of questions and I'll first ask Madame Beaudet for her questions.

--- QUESTIONS FROM THE PANEL:

MEMBER BEAUDET: Good day, everyone.

I have one question referring to a major point you made that we do not have sufficient information to proceed with the hearing.

I must say, this has taken me by surprise, because I always feel we learn a lot during a public hearing. This is probably my 26th commission I'm on and we're going to have three weeks coming, and when we finish we gather so much information that are not available now.

And I'd like to ask you what difference you make then between adequate? I think we have many subjects. We have adequate information that can take us in many ways to go deeper and get everything, hopefully, that we will need to write our report. So what is the difference in the definitions you have between adequate and sufficient?

MR. MATTSON: It's a very good question and I think it's an important one, particularly in light of this new process that you're currently sitting on, which is a new nuclear reactor under an environmental assessment hearing.

And the rules, as related to the *Canadian Environmental Assessment Act*, the licensing rules certainly allow for a whole different process and one that you might be more accustomed to, but the *Canadian Environmental Assessment Act* rules that even we've been following very carefully have limited us to the evidence under the notice and comment provisions of OPG.

So what OPG puts on the record, that's the material that we've had notice of and we've been able to comment on, and we've been funded in order to hire experts to review that material.

So for the past two years, for sure, we've been reviewing this. In the past three to four months our experts have been reviewing the material that OPG has provided us with. And without full and complete material or a complete record, our consultants are not able to be of help to you on the *Canadian Environmental Assessment Act*

decision.

In other words, they can't make determinations or provide evidence to you in the course of this hearing that would allow you to make an appropriate decision under Section 16 of the *Canadian Environmental Assessment Act*. They need to know what reactor is proposed to be built here. They can't sit there and wait for OPG to decide a couple years later; they're gone.

The *Canadian Environmental Assessment Act* hearing is a one-shot deal, unlike licensing where you can come back and it can evolve. This is the one time you get to look at these issues for Lake Ontario for the next 100 years.

And so it's a bit of a shell game on OPG's part if they feel that they can use the licensing hearing to keep the information in their back pocket until they get the *Canadian Environmental Assessment Act* approval and then bring it out later, because we don't have our experts then. We don't have our cooling water expert, our hydro geologist, our air modeller, our biologist; they're gone.

They've only made reference to and

provide evidence to assist you here today upon the evidence provided by OPG so far.

So it may be a surprise, but certainly our organization, you know, over the last three, four months, has been very concerned about the lack of information and we were always bringing this preliminary motion to you before we were going to embark on this important journey about making this decision under CEAA.

But it is a CEAA decision; it goes directly to the issue of notice, telling us what they're bringing, and allowing us to comment so that we can be of help to the Board.

And that's the big distinction here. It's a different form of quasi-judicial process. Different laws are involved, important laws. As you are well aware, there is no provincial environmental assessment so it's this Board that has the ultimate duty and responsibility to the people of Ontario and the people of Lake Ontario to hold OPG to a high standard and make sure that they abide by the *Canadian Environmental Assessment Act*.

I hope that's helpful.

MEMBER BEAUDET: I'd like, for the

record, to correct a few things. I'm new with the Nuclear Safety Commission. I've always been with all the previous commissions with CEAA or the Bureau d'audiences publiques sur l'environnement in Quebec, so I know very well the system with CEAA and what it entails.

And in the agreement we also have to first prepare a report that addresses CEAA. So I think -- and it covers all the phases of the project.

I think with the Canadian Safety Nuclear Commission it's the detailed recommendations that comes afterwards, and that's what I meant by being surprised, because I felt we have all the subjects there already and in an adequate form.

You may question the sufficiency, but we are now here for the next three weeks to try to work on that.

MR. MATTSON: We only have 30 minutes on March 28th, five experts, reviewing the information that OPG has provided us to date. They don't have another opportunity to come back on these issues, nor to review them.

So any new information that

substantially alters the type of reactor, the design, new concerns raised, whether it's seismic or spent fuel ponds or containment, any of those issues, our organization has not had the opportunity to know it's coming forward or to review it or have an opportunity to respond to you. We have a half hour March 28th.

And we've worked very hard to provide you with the very best evidence, and we're basically at OPG's application; we're responding to that and that alone because that's all we've been allowed to during the scope of this Canadian environmental assessment hearing approach.

MEMBER BEAUDET: Thank you. It gives context to your submission today. Thank you.

MR. MATTSON: Thank you.

CHAIRPERSON GRAHAM: Thank you, Madam Beaudet.

Mr. Pereira?

MEMBER PEREIRA: I don't have any questions at this time.

Thank you.

CHAIRPERSON GRAHAM: Thank you.

Then this concludes the panel's

first round of questions.

We'll now hear from the Canadian Environmental Law Association as outlined in their letter to the panel dated March 14th, 2011.

Ms. McClenaghan.

MS. McCLENAGHAN: McClenaghan.

CHAIRPERSON GRAHAM: McClenaghan; pardon me. The floor is yours.

--- PRESENTATION FROM THE CANADIAN ENVIRONMENTAL LAW ASSOCIATION BY MS. THERESA McCLENAGHAN:

MS. McCLENAGHAN: Thank you very much, Mr. Chairman.

As you know, my name is Theresa McClenaghan, with the Canadian Environmental Law Association.

So I'd like to start -- I have a request for a postponement first, and we have a request for postponement on three separate grounds, so I'll be speaking to those, and then we have some additional matters that we raised in terms of clarification of some of the procedural issues.

So, first of all, we do request that the hearing be postponed due to the events in Japan. And I want to add that I'm also tabling a letter that was signed this past weekend by another

35 registered participants who have asked me to bring it and present it to you this afternoon, and so I can do that.

CHAIRPERSON GRAHAM: Yes, I wonder if the Secretariat could receive that letter? Madam Bouchard is going to come and get this so necessary copies can be made and so on.

MS. McCLENAGHAN: Thank you, Mr. Commissioner.

I was requested to do so because we did comply with the panel's deadline in terms of requesting an opportunity to speak to procedural issues before you.

It's not possible, in our opinion, to examine the implications of the tragedy in Japan within this hearing as it's presently constructed, in terms of its scope, nor at this particular time. It necessarily will take time to obtain the reports and do an analysis of the events that are occurring as we speak in Japan.

To proceed now on the basis that lessons learned from Japan would be tabled at this hearing, in my opinion, is not credible and reduces the potential for public trust in this process. There simply would not have been the time to

analyze and allegedly learn the lessons and appreciate their implications in terms of how we operate nuclear power in Canada within this hearing or within the broader questions of the safety of operation of nuclear power in Canada.

The issue is not simple and it's not simply that a tragedy developed from an extremely severe earthquake and a massive tsunami followed by several nuclear reactors entering crisis modes. There are more fundamental questions that the Japan tragedy demonstrates and these are part of the questions that need to be analyzed.

Japan does have a highly technologically advanced economy. The entire nuclear industry globally operates on certain paradigms that are stated to provide assurances of safe operation, things you would be familiar in terms of hearing about in other contexts, such as defence in depth, planning for multiple failures of safety systems and providing redundancy.

The lesson of every such tragedy has been that these protections are insufficient in certain unexpected sequences of events. There is no assurance of absolute safety and engineering solutions are not always enough.

If we proceed now, in my opinion, we will receive assurances as opposed to information and those assurances cannot possibly be based on an informed analysis of the events in Japan.

While technology differences from the CANDU will be mentioned by its Proponents, I'm sure, the CANDU has its own weaknesses as a technology and 25 years ago much was made of the differences in technology at Chernobyl compared to light water reactors such as those operating in Japan at present.

We've had numerous severe accidents over the history of nuclear power generation and each has their own sequence of events but there are common lessons and new lessons learned from each severe accident and these need to be completely re-examined and then applied as a result of the current ongoing tragedy in Japan to our context here in Canada.

Given that in this hearing we don't even know which technology we're potentially talking about for new reactors in Ontario it is all the more inappropriate to proceed without obtaining that full analysis of the events in Japan.

The second ground on which I'd like to request a postponement of the hearing is due to inadequate information before the panel.

We further request a postponement as the EA today does not include in its scope, first of all, the accident potential, the full accident potential of the various technologies.

Consequences of beyond design basis accidents, such as the accident in Japan for any of the potential technologies is not before us, nor is the examination of the need for new nuclear plants in Ontario or the alternative forms of non-nuclear power generation.

I will also address this point if the hearing proceeds when I'm scheduled to give my own submission, presently scheduled for April

The other issues not addressed in the EA to date include long-term management of high-level fuel waste generated by new plants and the lack of an appropriate solution for that waste, nor the full lifecycle environmental impacts of the nuclear fuel and generation cycle.

And we would reiterate that the EA is premature given the lack of information as to the technology choice for any potential new build

at Darlington.

The absence of information as to the technology to be pursued is fundamental to the ability of this panel to make an informed recommendation under CEAA to the government and to the ability of the participants to adequately participate at an appropriate level of detail.

In fact, this environmental assessment is so limited in scope that in my opinion it hardly amounts to environmental assessment as it assesses only some of the environmental impacts of routine operations of the technologies under consideration and has considered impacts only of some accidents, i.e. design basis accidents, which by the feat of definition means accidents that would not be severe enough to breach containment at the plant.

I won’t repeat the sections of CEAA that Mr. Mattson read, but I would note that Section 16 requires every assessment to include a consideration of the environmental effects of malfunctions or accidents and the significance of those effects.

And in my submission, limiting the consideration of those accidents to design basis

accidents is not sufficient for a CEAA type analysis.

We also note that the agreement between the Minister and the CNSC establishing this joint panel provides that nothing in the Joint Panel Agreement shall be construed as limiting the ability of the Joint Review Panel to have regard to all considerations that appear to be relevant, pursuant to both the *Nuclear Safety Control Act* and specifically references Section 16 and 16.1 of the CEAA.

Similarly, alternatives are included in Section 16.2.

I also note that the Joint Panel Agreement requires, in Part IV, in terms of the scope of the environmental assessment and the factors to be considered in the review, a consideration again of the factors in Section 16.1(a) to (d).

CELA further calls for a postponement of the hearing on the basis of the potential addition of a fourth reactor technology, the CANDU 6, a matter which we have raised with the panel in correspondence prior to today; namely, in two letters submitted to the panel by CELA, SAGE,

(Safe and Green Energy) Peterborough with Mont Vert, Lake Ontario Waterkeeper and Northwatch on October 5th, 2010 and March 3rd, 2011.

In those letters we queried whether the panel is including the CANDU 6 in its considerations since we were not clear as to whether it was or was not included and we objected if the panel does do so without providing additional time for examination of that technology by the intervenors and further funding for same.

On September 7, 2010, shortly after our groups learned indirectly of the proposed addition of the CANDU 6 as a reactor design to be considered in the environmental assessment, the panel announced that the period for public review and comment on OPG's environmental impact statement was to end on October 8th, 2010.

Those who had received funding to do so had already hired experts and spent the majority of those funds for participating in the Darlington environmental assessment. At this late stage in the process, participants and other members of the public do not have the ability to meaningfully assess and comment on the possible use of the CANDU 6 reactor design and the associated

risks.

As CEAA provides for the requirement for opportunities for timely and meaningful public participation throughout the environmental assessment in Section 4, the environmental assessment of the proposed Darlington new nuclear project must begin anew if the CANDU 6 or other designs not previously before the panel are to be considered.

Or at the very least, the process must be put on hold temporarily to ensure participants and members of the public are able to assess and critique the new design option.

Along with identifying the reactor design to be employed and considering all related works and undertakings, this is necessary to ensure that the project is considered in a careful and precautionary manner, as required by the purposes of CEAA so as to ensure that it does not cause significant adverse environmental effects.

Further, the late addition of a fourth potential reactor design in the environmental assessment process, absent formal notice, and absent an opportunity for groups to apply for additional resources and to provide

meaningful comment represents a clear violation, in our opinion, of the rules of natural procedure and procedural fairness which govern the panel's consideration of the proposed project.

We would have expected to receive formal notification regarding the change in scope of the Darlington environmental assessment if and when a decision was made for the panel to consider alternative reactor designs such as the CANDU 6 in its review.

Our concerns with regard to the violation of the rules of fairness through the late introduction of the CANDU 6 design into the environmental assessment process are compounded by the fact that we have significant concerns with regard to the safety of the CANDU 6 design itself which has not been licensed in Canada under modern standards since it was dated originally from the 1960s.

Turning to other procedural points which are relevant if the panel denies our request for a postponement or if the panel resumes at a future date, including other matters from our procedural letter sent to you on March 14th, firstly, we acknowledge and appreciate that a

number of the procedural matters have been addressed by the panel in its correspondence to this point, including in addition to those we listed on our March 14th letter, the additional clarification of the time by which transcripts will be posted, i.e. the next day after each hearing and the provision of webcasting.

These are important matters that the panel has responded to and we appreciate that.

The following are the additional other procedural points on which we still seek clarification.

Firstly, we will again note that we have a concern about the lack of public transit and transportation to this hearing venue. In our opinion, this does raise accessibility and safety issues. We understand that it's not walkable from the nearby Go Station, for example.

This does continue to be an issue. I know a late letter from the Secretariat provided a link to Durham Transit and unfortunately, although I had looked at Durham Transit on another occasion, I didn't try the link until yesterday and it doesn't take us to the appropriate place. But nevertheless, when I go to Durham Transit's

website, it’s quite difficult to determine how to access transit to this location.

In our view, it would be inexpensive to offer a shuttle bus from nearby transit such as the Go Station for the commencement of each half-day of hearing.

Secondly, we would like confirmation in terms of the participants asking questions of the Proponent and of the agencies who’ve been directed to make presentations to you.

Some direction was provided by this panel, but we are interested in understanding in terms of preparing our questions whether those would follow each presentation, one participant at a time, or whether they would be raised during the presentation on an as-it-comes-up basis, and would appreciate that clarification.

We did note the additional directions about conciseness, about appropriateness of subject matter and that kind of direction.

Thirdly, we repeat our request and our opinion that you should receive the information from the Proponent and agencies as sworn evidence.

This may also well be true of participants as well, depending on the nature of

their participation.

Sworn or affirmed evidence, by definition, carries more weight, is more credible, requires the person providing the information to take more care in terms of showing its veracity, its thoroughness and its accuracy.

We would also appreciate direction daily as to how participants and the interested public following the proceedings remotely will be able to access materials which are being presented each day.

Many documents have been posted and I dare say it will be difficult for those who have not been engaged in the process at a great level of detail to know where they should find the information that is relevant for the following day in particular.

We also had made a request regarding French translation. Your directions have indicated that you will be providing and I understand at the moment are providing for simultaneous French/English translation.

However, it does appear in the directions that transcripts as posted will be only in the language -- the official language in which

they were originally presented and we still would request translation to the other official language of those transcripts.

So those are the submissions we have and I look forward to the opportunity to discuss these matters furthers with the Panel.

CHAIRPERSON GRAHAM: Thank you very much.

OPG, do you still want to maintain an answer only at the end? Okay, the nod recognizes that.

So we will then go to questions from our panel members. And Mr. Pereira, you may have a question.

--- QUESTIONS BY THE PANEL:

MEMBER PEREIRA: Thank you, Mr. Chairman.

I'll start with the question about reactor technology. In its submission, Ontario Power Generation chose to use an approach which is to describe what is being assessed in a plant parameter envelope.

And then coming up with that envelope, they initially identified three reactor-types technologies and developed a bounding

envelope for those technologies. And in going forward, the panel then accepted that bounding envelope as what was being considered for the environmental assessment.

When it comes to choose a reactor, our understanding is that Ontario Power Generation might chose another technology that was not one of those three but they would have in the end to demonstrate that their choice falls within the envelope. And if it doesn’t, then it's outside the scope with the environmental assessment.

So this is the challenge they face to demonstrate that the eventual choice of technology falls within the envelope that was assessed in the environmental assessment.

So in response to your question, your concern; that is where -- that is how we are proceeding with the environmental assessment. We're looking at an envelope. And I'll leave it to Ontario Power Generation to elaborate on how they chose to or why they chose to go down that route and how they see it being applied in the future.

Your second major point concerned a number of safety issues that might be identified from the incidents, unfortunate incidents in Japan.

Now, there are two aspects here. There's environmental assessment and reactor safety. In the process we are going through at the moment, we're looking at environmental assessment and safety with respect to the licence to prepare a site.

Safety beyond that for the operation of a chosen reactor technology is something that is covered in the CNSC licensing process, the licence to construct a site and eventually a licence to -- a licence to construct a reactor and eventually a licence to operate a reactor.

So in looking at the environmental assessment, the panel is challenged to understand what has been described in the Environmental Impact Statement is broad enough a scope to describe the types of environmental impact that might arise in accidents. And that is the challenge we face.

We're not looking to look at what would be covered in subsequent stages of the licensing that would be covered under the *Nuclear Safety and Control Act*.

So from our perspective, what we have before us is information that we believe at

this point is sufficient to proceed with this hearing.

And as we proceed with the hearing, we will be testing out information that Ontario Power Generation provided to us, listening to the assessment from other government departments and then going back to Ontario Power Generation to get clarification. And at the end of the day to determine whether we have enough information to be able to reach a conclusion on the environmental impact of the reactors at Darlington, the full lifecycle of those reactors.

So that's where we see ourselves with the issues that you raised with respect to the envelope that is addressed and the types of reactors that might fall within that envelope and meet the safety of environmental assessment.

Thank you, Mr. Chairman.

MS. McCLENAGHAN: So Mr. Chairman, I have a few comments and response to that perspective.

First of all, the PPE, the envelope does not include beyond design basis accidents. This is a fundamental shortcoming and both dealing with that and with your latter point,

the CEAA does require you, mandatorily requires you to consider accidents. It does not require you just to consider minor accidents.

In our opinion, this is fundamental to CEAA and the decision you have to make in CEAA. The fact that there happens to be in this particular technology subsequent licensing stages in no way removes your responsibility to consider all of the factors set out in CEAA within this environmental assessment as an environmental assessment.

In my opinion, it's not credible to have an evaluation, an environmental assessment evaluation that leaves out the potential serious accidents from each of these technologies. Plus the potential serious accident is, to some degree, unique to each of these technologies.

So to proceed with some kind of an abstract envelope that mashes together the technological maximum parameters for routine operation from all of those potential technologies doesn't achieve the objective of looking at the potential consequences of things going wrong.

So those are some of the comments in response.

The envelope approach also provides a great deal of difficulty in terms of testing the information and in terms of appreciating the relevance to the subsequent licensing stages and this is demonstrated already by the potential late edition of the CANDU 6.

And I noticed in reviewing material, it seemed to be necessary for OPG to modify its PPE very late in the process to accommodate the CANDU 6 which has to demonstrate the inappropriate approach of using this kind of an envelope approach to environmental assessment.

CHAIRPERSON GRAHAM: Thank you.

Mr. Pereira, do you have anything else to add before I go to our other colleague?

MEMBER PEREIRA: Just one comment in terms of the releases that would happen in an accident. I think -- and I'll leave OPG to describe it more in detail if they chose to do so.

But what we had before use was an assessment of the releases that would arise with accidents that test the limits of standards set by the CNSC. So in other words, the maximum releases that would be licensable, the hypothetical releases that would meet licensing requirements in Canada.

So this is the choice that OPG has chosen to bring forward in this environmental assessment. And I will leave OPG to expand on that.

When it comes to the main part of the hearing; that is an issue that we will be asking questions about to obtain a better understanding of how those postulated releases were chosen and how they are applied.

So simply those are issues that we will be following up on and it certainly lines up with your concern about whether that was an appropriate choice. But we will be looking to OPG to justify those. And we will be asking some of the other government departments present here in this hearing also to expand on how those releases should be considered in terms of what a proper environmental assessment should consider.

CHAIRPERSON GRAHAM: Thank you, Mr. Pereira.

Madame Beaudet?

MEMBER BEAUDET: Thank you, Mr. Chairman.

There are two things here I'd like to look with you. On many occasions, I've had to

preside commissions where the project evolves or the Proponent comes and he has Plan A, Plan B and, you know, you have to force him. You have to choose which project you're presenting in front of us.

So I know of a case where it was a windmill farm and they knew the region where they were going to put the windmills. But the actual windmills, you know, the location wasn't determined. And I think we are all to blame for that.

We've invented adaptive management and I've seen in the last 10 years submissions being radically different from when you had to come with a specific project. And I -- for me, I feel that this is our own creation and we have to live with it now.

I mean, we have a project here that the Proponent hasn't chosen the technology and tried to be creative in compensating with that. I mean, there are reasons all known to everyone why the technology is not chosen yet.

And my second point is -- because you mentioned that you brought to us a motion because you feel that your experts have already

looked at what you thought was the project.

And I would like to know is it because now there's no money? And, you know, this panel has nothing to do with the funding; it’s an independent process.

Is it because there's no money really? Or is it because you didn’t have the time?

Because all the documents to adjust the PPE with respect to the EC-6 were all submitted I believe in November. And -- so, we would like to understand why you came at such a late date to tell us, you know, ECC, we’re not supposed to look at that.

Is it time? If we give you time to react to that, would that be agreeable? I mean, I’d like to understand exactly the purpose of that part of your motion.

MS. McCLENAGHAN: Right, so I’ll start with that first.

So the five or so groups wrote to the panel in the fall when we first had some -- and it was just -- not much more than a rumour that Candu 6 might be before you which was a surprise to everyone and wasn’t what everyone’s experts had looked at.

So, all of those things are true that you mentioned. Experts had spent the money that had been assigned to them. My organization didn't get funding for experts but those who had had spent the money on the issues they were scoped to look at.

Secondly, there was a huge paucity of information about the Candu 6 and in my opinion there still is. The only thing I've noticed is a change to the PPE. But otherwise none of the much more extensive amount of information that was provided on the other three technologies in the entire lead up to this hearing.

And then thirdly, absolutely time is an issue as well.

So, those are all relevant issues. And those are real issues for these NGO's who otherwise do not have resources. We're talking about -- in these kinds of proceedings, a huge disparity in resources as you know and which participants funding is intended to help address, between those who are participating in the public interest and those who's economic interest it is to propose the project, huge disparity in resources.

So those are all relevant issues.

But as my argument outlined, we also would have expected formal notice and request to comment and indication of where the documents were and what the process would be around the Candu 6 and how much more information was being requested, in a structured way similar to the way the other technologies were being reviewed.

With respect to adaptive management, in my opinion adaptive management has its place but it in no way makes it appropriate to proceed with this matter as an environmental assessment that's ready to go.

The Proponent should select its technology and then it should do the environmental assessment, would be our contention.

MEMBER BEAUDET: Thank you.

CHAIRPERSON GRAHAM: Thank you very much, Madame Beaudet and Canadian Environment Law Association for their summation.

This concludes the panel's second round of questions.

We will now hear from Northwatch as outlined in their letter to the panel dated March 14th, 2011. And I believe it's Ms. Lloyd.

Welcome and the floor is yours.

--- PRESENTATION FROM NORTHWATCH BY MS. BRENNAIN LLOYD:

MS. LLOYD: Thank you, Chairman, panel members. My name is Brennain Lloyd and I'm here on behalf of Northwatch.

We are a coalition of environmental and social organizations in North Eastern Ontario. And our interest in this review is primarily with respect to the waste that will be generated by the proposed new reactors.

I'm speaking to you this afternoon on four matters all of which have been raised with you in writing. The first three issues are I would say procedural matters in a fairly straightforward fashion.

The first is with respect to provision of final comments. We have asked the panel, both in our correspondence of December and again of earlier this month, to clarify what your requirements are or what the opportunity is for interveners or participants to provide final submissions, written comments or with oral presentations after all of the evidence is before you.

This is a standard practice in

most reviews. Certainly it was the case in the Federal Reviews we participated in a number of years ago and it's certainly standard in Ontario Reviews.

So we would ask that you clarify, and in particular, let participants know what the deadline is. I would expect some time after April 8th, recognizing that you have a deadline yourselves.

And if there are any direction you wish to provide to participants in making those final submissions in terms of length, format, whatever. And I think the sooner, the better because that is partly how we prepare those final comments is knowing what will be most helpful to you in terms of the structure of them and when we must have them to you.

And I do think it is an important final exchange between participants and the panel. And I would really encourage you to provide us that direction very soon.

The second point I wish to raise is with respect to questioning during the hearing and I did find your procedural rules to be quite clear and quite helpful in this regard.

But I was I would say troubled by some remarks raised in a letter -- contained in a letter from the Ontario Ministry of the Attorney General dated January 13th and it was directed to Debra Myles. And it created for us a concern that there may be an expectation developed within that ministry of what could potentially be very inequitable treatment of presenters.

And in particular in that letter the Attorney General's Office stated that there was an expectation that the Ministry of Energy presenter would have the opportunity to determine who could pose questions.

We think that's your role, your responsibility but the letter stated that the information provided was that questions would be posed to the presenter only with the consent of the presenter.

We think if you could simply clarify that point early on to ensure that there is fair and equitable treatment of all participants.

The third issue is with respect to the inclusion of the Candu 6 and I'll simply adopt the submissions of Canadian Environmental Law Association. We were one of the co-signators to

those letters and in the interest of time, I'll simply adopt CELA's remarks.

The fourth is the matter of our request for a suspension of this hearing to allow due consideration of the incident of the incident -- the crisis that continues even as we speak for Fukushima Daiichi in Japan.

We are respectfully asking that you suspend the hearings to review this proposal. In our view, with all thoughts and concerns still so focused on ongoing efforts to contain or control that situation at Fukushima Daiichi.

Proceeding with this hearing is both insensitive and impractical. Insensitive, I really think it does not show proper regard for the suffering and anxiety of the people of Japan and others around the world are experiencing as the tragedy continues.

And I think impractical because it denies this review the opportunity to integrate important lessons learned into this review and it's very relevant, it's directly relevant.

Experts have been -- since the beginning of the crisis, referring to this as something which is beyond design basis.

And as you've heard in the remarks by my colleagues earlier today that issue of Ontario Power Generation having adopted this plant parameter envelope that excludes accidents/incidents beyond design basis is very at the heart of the tragedy that's unfolding in Daiichi and why it's so relevant to these proceedings.

We did write to you on March 16th asking you to suspend the hearings given the ongoing situation in Japan and subsequent to our letter there was an announcement from the Canadian Nuclear Safety Commission, on that evening the CNSC issued the notice stating that as a result of the Japan nuclear incident the CNSC is reviewing safety cases for all of Canada's nuclear facilities.

And in fact, the CNSC stated that your review is the venue for this taking into account of relevant lessons learned for implications on Canadian facilities.

I was surprised to read that. I had written requesting that you suspend for the reasons outlined. I was surprised to read that the CNSC had placed this tremendous burden on your shoulders and I would encourage you to think

carefully about how you respond to that direction request.

I'm not sure -- I think there's been a series of announcements from CNSC that raises questions about whether they are directions -- some of these announcements are directions from the panel or directions to the panel. I'm now sure how consistent or inconsistent they are actually with your guidelines. I think there are important issues there.

Nevertheless, the CNSC announced that this review was a venue for consideration of lessons learned and we put to you a number of questions about how that evaluation would be done and they're outlined in our letter of February 17th. Who would be presenting and preparing the evidence? What resources would be made available to intervenors to consider this? Will OPG be re-presenting, redoing, re-presenting their safety analysis in light of those lessons learned? How much time would be allowed, et cetera.

And these, I think, are very pressing questions.

Since then we've had an announcement seemingly from yourselves as the panel

and now it seemed that there would be presentations on seismology and related safety features.

You do note that these presentations should not be construed as the only opportunity for the Joint Review Panel for consideration of issues pertaining to Japan and seismology. The panel is prepared to take all necessary measures to ensure that they have the information to carry out their mandate.

And I would say to you that necessary measures include a suspension of this hearing to allow that review to take place.

First of all, of course, we have to see that the situation has come under control, that there's an opportunity for evaluation of cause and effect, and to that, then those lessons learned need to be applied to OPG's work and I would suggest that it is going to require considerable work on OPG's part.

To take all measures necessary is a significant endeavour and with all respect, bringing in an extra PowerPoint on seismology won't do it.

We've been a very responsible participant to this review and we continue to take

our responsibilities very seriously and we don't take our request to suspend the hearing lightly. It's been an incredible amount of work, but in the interests of having a fair and informed review we think it is necessary. We recognize the additional demands that we make on the panel, the additional demands that were placed on the participants, but in our view the situation demands nothing less.

Thank you.

CHAIRPERSON GRAHAM: Thank you very much.

OPG, again, I guess you want to wait until the end of all of them.

So then I will go to Madam Beaudet ---

MR. GARROD: Mr. Chairman, sorry. Steven Garrod, for the record.

I believe this is the end of the three of them.

CHAIRPERSON GRAHAM: No, it's not. I said at the outset we had two late -- late filings that just came in today and in the course of fairness we would hear them, not -- we will alter the rules, so this way, we're not going to give them the 20 minutes; we'll give them a few

minutes to present, if they wish to, and then we'll go to that.

MR. GARROD: Thank you, Mr. Chairman. That's fine.

CHAIRPERSON GRAHAM: Okay. So Madam Beaudet, have you any questions with regard to the Northwatch presentation?

--- QUESTIONS BY THE PANEL:

MEMBER BEAUDET: Thank you, Mr. Chairman.

I'd like to know exactly what you mean by final comments because you saw our schedule. We have a three-week period, even on Saturdays, and I'm questioning if it's realistic to have 248 people coming back to give final comments.

Do you mean that you would like to give us -- give you the opportunity for whoever wants to come back or do we have to expect everyone to comment on the hearing? Does it have to be here in front of everyone? Can it be whoever wants can send comments -- final comments in writing?

Could you clarify a little bit more, please?

MS. LLOYD: Certainly. Well, I think there are two options which could be

combined. One option is oral submissions; another option is written submissions.

I think that there needs to be some time after the final day of presentations, April 8th, which would mean reconvening perhaps a few weeks later if you were to entertain oral submissions.

I would be satisfied on Northwatch's behalf if we were given the opportunity for written submissions.

They're very important because, as you know, your schedule is very tightly packed. You know, we have presentation after presentation. You have four presentations in most of your sessions. If you consider half an hour presentations, some time for panel questions, questions from other presenters, you've given very definite direction that it's questions, not comments.

But there's going to be lot brought before you, and so a lot brought before the participants, and I think that it is necessary for participants to have the opportunity then to comment back to you, to reflect back to you what they have learned, heard, not heard, that is of

real importance to you in your final considerations.

I don't -- most participants can't be here all the time. There's no opportunity to ask questions unless you're in the room and there are things that may need to be brought to your attention not in the form of a question, in the form of a comment.

And that's the purpose of final written submissions. If you would choose to supplement that with oral presentations, it allows you then to have a back and forth, but those options are both available to you.

MEMBER BEAUDET: My understanding is when usually commissions with CEAA have final comments, because not every commission does it -- Some Commissions do -- they don't see all the briefs beforehand.

I mean, in your case you've seen everything. I mean, everything was submitted from the end of January until the 21st of February and so if there are certain things that people don't agree with, you can use the time you have when you come in front of us to say so. I mean, you know, sort of a final comment at the end of your presentation.

And that's where we thought it would -- you know, it was fair enough, you've seen all the documentation beforehand. So we didn't see at that time why it would be justified to add again another period.

Because the CEAA Commissions, people don't see the briefs before they're presented.

MS. LLOYD: With 30 minutes for presentation time, I don't expect that we're going to have the opportunity to say everything to you that is in our submissions and we have additional comments on other intervenors' submissions, on the government documents.

I think that there -- I hope that there will be meaningful exchanges between you as the panel and the Proponent and other participants throughout this three-week review which will bring additional information and additional concern and additional perspectives to light.

So I think that we can only hope that we will learn more through this three-week period of exchange then we have in the written word, and so I think that there will be still a positive benefit in having final comments.

MEMBER BEAUDET: Thank you.

And my last point would be; your comment saying that it would be inconsiderate and insensitive to go ahead with the hearing because of what happened in Japan.

And of course we thought a lot about that as well, I mean you have to realize that we were wondering what happened, this has fallen on everybody's head.

I was at a concert last Friday given by a Japanese orchestra in Montreal and they had two musicians that had lost their homes and their parents, and the orchestra wondered, should we go ahead with our North American tour considering some of our colleagues are in mourning, and their decision was to go ahead because they felt there's energy, there's hope in the music.

We have a different matter to deal with here, it's not music. But I'm wondering, how the Japanese would react because Japan was considered, you know, at the top of the nuclear industry and maybe for them they feel guilty to some extent of what's happening in their country and maybe it's with respect if we go ahead.

I'm just putting this on the table

that we consider, again, what they're doing there, what happened to them and that we should look a closer look now and not wait to see what we are going to do here.

MS. LLOYD: Well, I think if this review can accommodate that closer look perhaps that would be appropriate.

But to continue with a business as usual approach, which says that scoping out the more severe risks, the more -- the risks of severe accident, catastrophic events, even malevolent acts, that's what we see in the environmental assessment, in the environmental impact statement and technical support documents that OPG has filed.

We think that's a fundamental flaw. We thought it before but as events continued to unfold with Fukushima Daiichi and it is as a result of that -- you know, of what we suspect to be a similar failure to look at risks beyond design basis.

That makes this a very pressing issue in this review and I think that it's not business as usual; it's time to stop, take stock, look at the rules, look at how decisions are made, look at our regulatory approach. I think that's a

very big burden for this panel. I don't think you're the appropriate group to have to do all of that but I think that's what's required.

MEMBER BEAUDET: Thank you.

MS. LLOYD: Thank you.

CHAIRPERSON GRAHAM: Thank you, Madam Beaudet.

Mr. Pereira?

MEMBER PEREIRA: Thank you, Mr. Chairman.

In a sense what is happening is exactly what you're seeking because we have before us an environmental impact statement that looks at severe accidents, it looks at seismic hazard at the Darlington site.

And what is going to be before us over the next couple of days is supplementary presentations from CNSC and from a seismologist on how those other experiences elsewhere fit in with what has been presented by Ontario Power Generation.

So it's an opportunity for this panel to be informed by the latest thinking on what happened in Japan.

But we do have a complete

environmental impact statement before us, presented by Ontario Power Generation, it is -- and it's up to this panel to decide whether that environmental impact statement is sufficient as a basis for any decision or recommendation on an EA assessment.

So we are going along the path that you're seeking, responding in a way and accommodating these presentations from the CNSC and on seismology.

MS. LLOYD: With all respect, I don't think that's adequate to the task.

Over and over again to the OPG documents or with language to the effect of -- and certainly in responses to the information request, there were language to the effect of "We didn't look at that because it wasn't deemed to be a credible event".

Well, it's the incredible event that we're seeing unfold as we speak and it's the incredible events that must be incorporated into this review. And I don't think that can be done with an additional PowerPoint on seismology.

CHAIRPERSON GRAHAM: Okay, thank you very much.

If there are no further questions,

as I said at the outset, we had two 11th hour or 11 hour and a half submissions that just came in this morning and I'm going to ask, first of all, if Peter Cambis (phonetic), if he's available and I'm getting a -- saying that he's not so we will take his submission as such and -- Julie, am I doing something wrong?

He's not here, okay, well we'll take his submission as submitted and we'll go to the last one which is from Chai Calvert (phonetic). Are they here to make a submission? If they're not then we'll also take that submission.

So with that then we'll now move to OPG for their participation in the three motions that are -- three panel submissions that are before us.

--- RESPONSES FROM OPG BY MR. STEPHEN GARROD:

MR. GARROD: Thank you, Mr. Chairman. Stephen Garrod, for the record.

I will be confining my responses to the intervenor's procedural submissions and will not be responding in any length to their substantive allegations as it is OPG's understanding that the purpose of this afternoon's presentation is procedural issues and a careful

consideration of the substantive issues is the purpose of the hearing itself.

If the JRP concludes that the hearing should continue, as OPG asks that it does, the panel will hear OPG's comprehensive responses to all of the intervenor's substantive allegations.

OPG fundamentally disagrees with the intervenor's allegations that its work in support of this project to date is in any way substantively deficient or inadequate.

OPG has undertaken intensive and rigorous expert studies over the past five years, has consulted extensively with the host communities, with the public and with Aboriginal communities.

OPG has responded comprehensively to hundreds of detailed information requests during the public review process that lasted for almost a year. And OPG is here before you today and for the coming weeks, ready to present and to defend the results of its work.

The details of that substantive work, however, are for another day, Mr. Chairman, in OPG's submission.

With respect to the intervenor's

procedural issues, there are two main categories; firstly, requests to delay the hearing from starting, and secondly, request to clarify or modify the panel's hearing procedures.

I will start with my comments with OPG's response to the requests for delay and I will have some brief comments on some of the other procedural issues afterwards.

Three reasons have been raised in support of the requested adjournment of the hearing; firstly, the recent events in Japan; secondly, the introduction of the EC-6; and thirdly, the allegation of fundamental gaps in the information.

For the following reasons, OPG respectfully asks that the panel reject those adjournment requests and continue with this hearing.

Firstly, with respect to the recent events in Japan; the primary ground for delay advanced by the interveners is to allow for lessons learned from the recent unfortunate events so that they can be taken into consideration.

Interveners referred to the statement on nuclear power plants in Canada and

their seismic safety which was released by the CNSC on March 16th in an effort to support their position that this hearing should be delayed.

In OPG's view, the CNSC statement is an affirmation that the JRP hearing can and should continue with confidence that lessons to be learned from those unfortunate events will be appropriately considered and where relevant, will be incorporated into the Canadian regulatory system and specifically into the approvals for this project.

The key phrase in CNSC's statement from OPG'S perspective is that the process of identifying and taking these lessons into account will start with this JRP hearing. It will not be completed in this JRP process and it will not finish with the conclusion of this JRP process. It will start.

It will start without delay and it will continue for as long as there are relevant lessons to learn and incorporate into the approvals of Canadian nuclear facilities.

The CNSC statement begins with a confirmation that health, safety, security and the environment are the highest priorities for all

nuclear activities in Canada. OPG completely agrees with these priorities and incorporates them into all of its nuclear activities. OPG takes its commitment to these priorities very seriously.

The CNSC statement strongly reflects the ongoing commitment of the nuclear industry to continued learning and improvement. OPG also takes continued learning and improvement very seriously. It is a cornerstone of the nuclear industry.

The approvals process in Canada for nuclear projects is phased. It is lengthy. It is comprehensive and it is open to public participation at all stages. OPG is at the early stages of this approval's process. This approvals process is precautionary and adaptive.

The panel will hear from OPG during the course of this hearing that it will take almost a decade before this project has completed the approvals process and is operational.

As noted in Section 11 of the *Canadian Environmental Assessment Act* and in the Decision of the Federal Court of Appeal in the *Inverhuron Ratepayers* case, and is also noted in Section 1.2 of the EIS.

An EA under the *Canadian Environmental Assessment Act* is intended to be an early planning tool and is conducted at the beginning of the approvals process when there is still flexibility and before irrevocable decisions are made.

In addition to complying with the *Canadian Environmental Assessment Act*, OPG must also obtain licences under the *Nuclear Safety Control Act* and the regulations governing Class One nuclear facilities.

Three separate licences must be obtained before a nuclear facility can begin operations and the licence being considered in this proceeding is the first of those three.

Each of those processes will require detailed technical applications with supporting expert reports that must be prepared and submitted by OPG. Each of those review and approval processes are open to all interested agencies and members of the public.

Three separate public hearings, including this one, must be held.

As noted a moment ago, these approval processes will take many years to

complete, likely to the end of this decade. There will be many opportunities to incorporate lessons learned.

Even after all licences are obtained, the CNSC has the power to require operators of nuclear facilities to re-evaluate, to report and to respond to its requirements should circumstances change.

An example of such an initiative is the letter that CNSC sent to all operators of nuclear facilities on March 17, 2011.

Canada has a stringent regulatory system that is based on the concept of continued learning and improvement, a cornerstone of the nuclear industry.

The licence to prepare the site which is the licence sought by OPG in this JRP process is just the first of those three licences that OPG requires, and if it is obtained will authorize OPG to do nothing more than to prepare the intended site for the potential construction of the facility.

The licence to prepare the site will not authorize any nuclear activity. It will authorize OPG to undertake earth moving, grading,

filling and general site preparation work. It is a large earth moving project but it will not involve nuclear material of any kind.

Before construction of a nuclear facility could go ahead, OPG will have to obtain a licence to construct for whichever reactor technology the Province of Ontario decides to procure.

OPG will have to demonstrate that that reactor technology is within the founding framework of this environmental assessment.

That application process will involve detailed technical consideration of all aspects of the design and construction of the reactors, including all considerations relating to public health and safety.

Relevant lessons learned from the Japanese situation, as well as other lessons learned from other operations around the world, will be carefully considered and incorporated where it is appropriate to do so.

Health, safety, security and the environment will continue to be the highest priorities. Everyone will have the opportunity to participate in the review and in the hearing before

any licence to construct can be issued.

Intervener funding would also be available throughout that licence to construct process.

A similar application review and approval process and another public hearing will follow before a licence to operate can be obtained by OPG.

These licensing processes under the *Nuclear Safety Control Act* and Regulations provide assurance that every possible lesson that may be learned from the unfortunate circumstances in Japan are fully considered by experts, by regulators, by the public and incorporated where applicable in OPG's approvals before any new reactors could be built or operated by OPG at Darlington.

Having said that, Mr. Chairman, I do not want to leave the impression with the panel that OPG is asking the panel to rely entirely on these future approvals processes. As the CNSC statement indicates, the process of considering the lessons to be learned from Japan starts here and now. The information that is before the JRP in this proceeding fully addresses at the appropriate

level of detail all requirements for the approvals being sought by OPG.

It is OPG's belief that the necessary information is available to enable the panel to fulfil its mandate. Those issues can be explored in full in the three weeks that have been set aside for this hearing.

An obvious lesson that has been confirmed by the Japanese situation is that natural disasters such as earthquakes and tsunamis have the potential to cause serious damage to nuclear facilities. And it is therefore crucial for the JRP to be satisfied that the proposed site at Darlington is suitable for the intended use.

OPG notes that the JRP has scheduled a session on seismicity to occur tomorrow. In that session, OPG anticipates that there will be a detailed consideration of the work that OPG has undertaken regarding the potential risks from earthquakes and tsunamis at this location.

OPG considers its work on these issues to be current, comprehensive, conservative and a state of the art assessment by highly qualified independent experts.

We are fortunate in Ontario that we do not have the high levels of seismicity risks that Japan has to endure. OPG's work is specific to the setting in Ontario and demonstrates that this area has a low risk for these factors.

OPG believes that the JRP will have the information necessary on this subject to satisfy itself that the proposed site is suitable in this regard.

OPG also anticipates that appropriate standards incorporating lessons learned will be required at the construction licensing stage to ensure that the reactors that are built will withstand any credible natural disasters for this area.

Another important lesson that is being confirmed by the events in Japan is the importance of appropriate emergency response measures. Again, OPG believes that the information available to the JRP on this issue, in this hearing, is current and comprehensive and will enable the JRP to satisfy itself that it can complete its mandate.

OPG expects that it will continue to learn and to refine its emergency preparedness

as new information comes available and that all relevant issues learned from the Japanese situation will be incorporated into the requirements for emergency response for this project just as the lessons learned from other recent natural disasters such as hurricane Katrina, have been used in the past to fine tune the current emergency response measures.

It is not necessary, Mr. Chairman, in OPG's view to stop moving while learning continues.

It is OPG's position that there is no merit, Mr. Chairman, to the adjournment requests on the grounds of the Japanese situation.

The second ground advanced by the interveners for adjournment related to the EC-6. The interveners alleged that the so-called late introduction of the EC-6 changed the scope of this project. I will be very brief on this point, Mr. Chairman.

OPG submits that the JRP has already, twice, provided a response to CELA and the other interveners on this point and the JRP's previous responses were correct and appropriate.

This issue was first raised by

CELA, Northwatch and others in correspondence on October 5, 2010; the JRP responded three days later on October 8th with a clear explanation.

Five months later, CELA wrote again on March 3rd, 2011, reiterating its earlier concerns. The panel responded promptly again on March 11th advising that the panel believed that it had already addressed these concerns. They're being raised again today for the third time.

OPG agrees with the panel's reasoning and would add the following points.

There has been no violation of procedural fairness, the multiple technology approach adopted in the EIS explicitly did not rule out other reactor designs from consideration. It is a bounding approach that encompasses the potential environmental effects.

The request that OPG provide information regarding the EC-6 came from the JRP in response to correspondence from the CNSC. The project description submitted by OPG in 2007 includes consideration of the EC-6.

OPG's IR response -- information request response on this issue which was august 30th, 2010, provided all of the technical

information required for the JRP to assess and determine whether the EC-6 was encompassed within this assessment.

Follow-up detailed revisions to the PPE were submitted in November.

The incremental revisions that were made to the PPE to encompass the EC-6 have been demonstrated in the documentation to be insignificant in terms of their potential effects.

The conclusion of the EIS that there would not be any significant adverse effects was confirmed in that documentation.

The process was entirely transparent and all information was made available in a timely way on the public registry. This information has been a matter of public record since OPG's response of August 30th, 2010, more than six months before the commencement of this hearing.

These matters, Mr. Chairman, can also be considered further in this hearing. OPG's position is that there is no merit to the request for an adjournment on this ground.

The final ground for the adjournment request was the alleged fundamental gaps in the EIS. CELA has indicated that there are

gaps associated with the failure to select the technology -- reactor technology and the PPE bounding approach.

Mr. Chairman, the multiple technology approach and the PPE, in our submission, make it unnecessary for a particular reactor technology to be chosen before proceeding with the EA. The approach taken by OPG bounds the potential consequences and any reactor technology that is bounded is inherently acceptable in that analysis.

Substantive issues can only be addressed in the hearing, in our submission, and not determined in a preliminary procedural motion such as the one advanced.

Lake Ontario Waterkeeper alleges that there are fundamental gaps in the EISs documented in their written submission and that there is non-compliance with Section 16 of the Act as a result.

OPG, as mentioned earlier Mr. Chairman, has substantive responses to these allegations of technical deficiencies. But this is not the time or the place to address those.

The adequacy of the information is a substantive issue not a procedural one or one

that should be dealt with on a preliminary objection basis. It is the very subject of the hearing itself. The panel must satisfy itself that OPG's work is substantively sufficient for it to complete its mandate. It must complete the hearing in order to finish that work.

The hearing, in OPG's view, is the proper forum to address those alleged deficiencies. So, OPG submits that there is also no merit to that reason for the requested adjournment.

And in conclusion on the adjournment issues, Mr. Chairman, we simply ask that the hearing proceed and those allegations can be tested.

With respect to the other procedural submissions that were advanced by I believe CELA and Northwatch, my comments are quite brief.

OPG has no comment or position on the request regarding public transportation.

With respect to item 7 from CELA's letter of March 14th regarding confirmation for the right of interveners to question witnesses, OPG supports the panel's hearing procedures Section 3.5. And OPG would simply add that any timing of

questioning that assist the JRP to fulfill its mandate in a fair and efficient fashion is acceptable to OPG.

We believe that the procedures that the panel has established will ensure a fair and reasonable hearing that will enable the panel to fulfill its mandate.

I would also note, Mr. Chairman, that in our submission, that section of the panel's hearing procedures is consistent with and implements paragraphs 17 through 20 of part 3 of the Terms of Reference that form part of the agreement to establish this Joint Review Panel.

With respect to item number 8 from CELA's letter regarding whether or not witnesses should be sworn. OPG takes the position that if it would assist the JRP to have all witnesses affirmed or sworn before giving their evidence, we would have no objection. We don't see it as necessary, the requirement if it is imposed, should apply to all witnesses equally.

The 10th point from CELA's letter was the request for direction about accessing materials and we take no position or comment on that.

Number 11, this is a request for translation of transcripts, we take no position on that request.

With respect to Northwatch's submissions about a final submission, again Mr. Chairman, it's OPG's position that whatever would assist the panel to fulfill its mandate would be acceptable to OPG. We don't see that as a necessary step.

But if the panel would like it, OPG would assist the panel in that regard.

Those, Mr. Chairman, are our comments on the detailed procedural matters that were raised.

Thank you, sir, for allowing me to speak at the conclusion of all of the intervenors' presentations.

CHAIRPERSON GRAHAM: Thank you very much.

I think there was some question maybe that -- you were going over your 10 minutes but at the outset, the Chair had indicated that it would be 10 minutes for each presenter and this was 21 minutes. So you're well within your time but I know there was maybe some question there. In the

part of fairness, I think it should be explained.

First we'll move to questions from our panel members. Mr. Pereira, you are first who might have questions to OPG.

MEMBER PEREIRA: I don't have any questions at this time.

CHAIRPERSON GRAHAM: Thank you.

Madame Beaudet?

MEMBER BEAUDET: I don't have any questions.

CHAIRPERSON GRAHAM: Thank you.

Then we'll move to the three groups that have made presentations here today on various issues and this is not cross-examination. This may be questions and we'll allow question to each to start off with and I'll start off with Lake Ontario Waterkeepers.

I'm sorry, I didn’t explain. It's a right of reply not questions as such.

--- REPLY BY MR.MARK MATTSON:

MR. MATTSON: Thank you, Mr. Chairman. I was about to write up some questions real quick. That was a great opportunity.

CHAIRPERSON GRAHAM: That’s been changed to comments.

MR. MATTSON: In reply, Mr. Garrod certainly I think his submissions were made a long time before he arrived here today. And I think they're very -- they were very well prepared in that they skipped over most of the issues I raised.

And by not addressing them, I think he hopes that you won't address them.

And it does make me wonder, you know, this is a hearing for the public. If it was just for the Proponent and the experts and government experts and all their stakeholder interests and special interests in the industry, we wouldn’t be here.

And so if Mr. Garrod, for example, is going to dismiss the argument that this is a preliminary issue, one that he needs to overcome prior to getting into the hearing proper by making an argument that he does have enough information before you upon which you can make a decision on the final outcome and that the public has the information before them that they can respond to.

Fair enough. But you know he didn’t make any argument on that. He went right to the point that this is substantive. It's proper to be heard in the hearing. And I point out the case

law on that; *Liberty Mutual Insurance v. Berger*.

There is a preliminary test that has to be met first. And I ask you to keep that in mind because I have asked this panel to make that decision. And if you make it that there is enough information; fair enough. And if he doesn't want to make submissions on it; fair enough. That's his risk.

But I think clearly there is a lot of missing information on the reactor. The Candu 6 is outside the PPE. It doesn't come within their Environmental Impact Statement as we argued. There is no reactor design. They've added new reactor designs recently and maybe most importantly is the issue with Japan.

Mr. Garrod is fairly confident that he can bring in evidence on seismisticity -- or seismicity somehow without asking the rest of us if there are issues we'd like to bring forward like loss of power incidents; location of spent fuel rods; how close are they to the lake; how full are they; how many are there; what containment is there around those spent fuel rod storage bins.

We'd like to bring in those questions. Are we allowed to? Is he going to

allow us to bring our issues in or is it just his issues that we can talk about, the ones that he feels he can bat right out of the ballpark?

So if you're going to allow them to bring in new issues and you're going to allow reactors outside the envelope to come in and you're going to allow Mr. Garrod to skip over the preliminary issue, then, you know, we're starting in a very difficult position.

Now, my friends have also mentioned the difficulty with only having 30 minutes to bring our case forward, mine’s on the 28th of March. My friend -- I'm not sure of my friend’s dates. But the idea that we would be able to respond to this new evidence, the idea that we would have the expertise, keep in mind, I'm a lawyer.

My friend Theresa is a lawyer and I know Brennain is an advocate. But the reason why we're provided with funds isn’t to pay us. We're not getting paid. It's so that we can go out and get expert evidence because everyone has an opinion as I'm sure you guys know.

But you're not only here to hear opinion evidence when it's expert. You're not just

here to hear opinion evidence. You will hear a lot of opinion evidence and you'll have to give it the appropriate weight.

Two hundred and ninety-four (294) people are coming here, many of them from the industry, most of them not experts. But when there's experts who give opinion evidence, it has to be given extra weight. And I know that all of you know that. I know Madame Beaudoin (sic) and I know all of you have a great deal of experience on environmental assessment hearings and the CNSC. And I know you probably give more weight to expert evidence than you would just any evidence.

And so, again, we don't have that. And we're not going to be bringing expert evidence on any name that Mr. Garrod says he can bring to the hearing now, new, without notice and comment, without us seeing and without us being able to respond.

So that's why we say it's a preliminary issue. That's why I think everything Mr. Garrod said proves it's a preliminary issue. I think he has failed in showing that empty evidence he intends to bring before you has been shared with the public and we've had an opportunity to comment

on.

In fact, he does the opposite. He makes it quite clear that he's bringing evidence in this hearing that we haven't seen, that we can comment on and he expects you to go along with it.

And my only submission to you at the end of the day is this: if you look to the *Canadian Environmental Assessment Act*, it's there for the panel to make a good decision but also just as importantly, it's there to make sure that the public is involved in a meaningful way, has the opportunity to look at all the information like you do, review it and provide you with appropriate comment.

That, according to the narrative from the Applicant today, is clearly not going to happen. And so you need to make that decision upfront if you're prepared to go their road or if you're prepared to tell the Applicant, "Look, you know, you admit you're going to bring new evidence. You've go the Candu 6 out there. You're outside the bounding and the PPE. You want to bring evidence about Japan. For God's sake, give the public an opportunity to participate in this. Give them the full opportunity of natural justice to

comment and then let's get on with the hearing."

This is an 89-year-old process going forward. This is their one chance. They don't come back at the licensing hearings. And I also note, somebody said that -- I wasn't sure, maybe it was Member Pereira -- that after the EA, OPG can decide which reactor falls within the PPE.

Where are we going to be? We're not part of that process. This is the process to make that decision. So if it's within the PPE, make sure they make that argument here. Because the public will no longer be part of that process. So who is going to make the decision that -- other than their, I guess, vested interest decision, who is going to make the judgment that they fell within what they said at this hearing? You'll be gone. We'll be gone. The public will be gone.

And so it might go to another licensing hearing. But this is the time for them to determine the reactor technology, prove that it falls within their bounding analysis if you accept that for the purposes of the *Canadian Environmental Assessment Act*.

And also to give the public the time to hear about this new evidence they want to

bring in. And also give us the time maybe to expand the issues' list, to bring in other important and relevant issues other than just seismic evidence around the Darlington Nuclear Plant.

Thank you.

CHAIRPERSON GRAHAM: Thank you very much.

We now move to the next presenter.

--- REPLY BY MS. THERESA McCLENAGHAN:

MS. McCLENAGHAN: Thank you, Mr. Chairman.

So I have a number of points in response to submissions by Mr. Garrod. The first is he made a comment about the EA being precautionary and adaptive.

And in my submission, the fact that the EA has left out beyond design basis accidents means it is not precautionary which is the beginning of the consideration of the lessons from Japan.

He also said that this is the beginning of an approval's process and outlined a number of licensing stages that are required under the *Nuclear Safety and Control Act*.

Well, first of all, as I already indicated, the EA is proceeding without any technology choice. So we're working very much in a vacuum.

But furthermore, those other licensing factors do not incorporate the requirements of the *Canadian Environmental Assessment Act*, important requirements such as the consideration of the Section 16 factors, the purposes of CEAA, the duties of responsible authorities and so on.

They're very distinct pieces of legislation. They have their own purposes and one doesn't substitute for the other.

Mr. Garrod also talked about the fact that we have a stringent regulatory system. I'm sure there's a stringent regulatory system in Japan as well. There's a stringent regulatory system in many countries around the world where nuclear power is operated.

However, the paradigm of that regulatory system is, to time and time again, say that we don't need to look at things that are beyond design basis, that, as was said earlier, are not credible. This is a problem.

This panel needs to look at the requirement in CEAA to look at accidents. It's mandatory to look at accidents and to say that those things that happened at Japan have to be examined for their applicability here which includes some of the things Mr. Mattson was just referencing.

Mr. Garrod talked about this just being a large earthmoving project. On the licensing side, that's all that's before you. But on the EA side, this is the EA for not only site preparation but construction, operation, decommissioning and waste management, and as stated in the documents to be something like a 60-year process. This is the EA and so the CEAA needs to apply to that entire range of activities.

Mr. Garrod also talked about the fact that the addition of the Candu 6 in terms of consideration before you was very transparent. I beg to differ. It took a lot of digging to find any documents that referenced that point. It was very opaque on the record.

It pretty much required opening document after document after document on the record to finally find such documents. They

weren't titled in such a way and no notice was provided to the public in that regard.

As I indicated, when we wrote the joint letter, we were operating at that basis basically on rumour. This was not a transparent process.

In our submission, choice of technology is the fundamental point. It's lacking here and we're proceeding with an environmental assessment. If we proceed at this time, contrary to our request for a postponement, with a complete lack of appreciation of even whether we're talking about the fact that in the future there might be a light water reactor or heavy water reactor operating on this site in Darlington.

Those kinds of questions are fundamental to any credible environmental assessment in our opinion.

So those are our submissions. Thank you.

CHAIRPERSON GRAHAM: Thank you very much.

Now, proceed, Ms. Brennain.

--- REPLY BY MS. BRENNAIN LLOYD:

MS. LLOYD: Thank you. Brennain

Lloyd. I'll be very brief.

I am pleased that Ontario Power Generation makes not objection to our comments with respect to the final submission and that they make no comment on all presenters being treated equally, including the Ministry of Energy when they make their presentation.

I'm not pleased but not surprised that OPG does not support our request to suspend the hearing. Mr. Garrod seems to rest his case on this key phrase. He identified the key phrase in the CNSC statement as being that your review will be the start of the incorporation, the taking into account of lessons learned.

Well, I think both the CNSC statement of March 16th and your notice of March 18th affirm -- acknowledge and affirm the reasonableness and I would say the necessity of incorporating lessons learned from the events that continue in Japan into this review for all of the reasons we've already outlined.

And I would simply close by saying that to suggest that the lessons learned can be adequately addressed by the presentations on seismology suggest that all the lessons learned --

the lessons to be learned in Japan are that Fukushima Daiichi is in a seismic zone.

I don't think that's going to be the lessons learned from Japan. I think I would expect we'll have a much closer review of, you know, the fullness of that situation and the fullness of that crisis, including the failures of the multiple redundancies which we are told by our regulators are built into the system.

Well, I'm sure the Japanese people were told by their regulators that there were redundancies built into the system. Why were they not enough? And how will the redundancies built into the system in reactors that are not yet even named going to be enough?

Those are matters that are directly relevant to this review.

Thank you.

CHAIRPERSON GRAHAM: Thank you very much.

It's gone very well this afternoon and thank you for everyone’s cooperation.

I will now ask my co-manager to read some logistics into what we plan to do before I have closing remark.

MS. MYLES: Thank you, Mr. Graham.

The panel will now take the information that they've heard here this afternoon into -- under advisement. The panel would like to take this away and deliberate on the information and have time to have a fulsome discussion amongst themselves on the matters.

So they would like to come back and report on the matters just in advance of the evening hearing.

So the logistics will be that the panel proposes that we reconvene at 6:45 tonight instead of at seven o'clock. And they'll report on the deliberations on the preliminary issues.

And then if the decision of the panel is to consider -- is to continue with the hearing, then the hearing will proceed at seven o'clock with the Chair's opening statement as scheduled.

So I hope that's clear. The panel will be coming back at 6:45 tonight and reporting back on the preliminary motions.

Thank you very much for your time this afternoon.

CHAIRPERSON GRAHAM: Thank you,

Debra. And I just thank everyone for coming this afternoon, for making my job very easy. And I thank the three groups that have come forward with the issues that they feel are -- feel strongly about. And hopefully we can have the time between now and 6:45 to render some decisions.

Thank you very much and this adjourns this panel until 6:45 this evening.

--- Upon recessing at 3:35 p.m.

--- Upon resuming at 6:46 p.m.

MS. McCLENAGHAN: Mr. Chairman, before you deliver your ruling, I wonder if I might bring a matter to your attention?

Just when we recessed this afternoon, it came to our attention right after that that there had been an exchange in the legislature today between the Premier of Ontario about this hearing and about the subject that you're about to rule on dealing with the need for more time and I think it's important that that exchange be on the record before you.

I brought it to the attention of the OPG lawyers and they considered the matter and then advised that they didn't think they needed to bring it to your attention because they didn’t

think it's inconsistent with their position.

I don't think consistency is the test. I think the exchange itself is quite relevant.

CHAIRPERSON GRAHAM: Thank you.

I guess because of what my comments will be and so on that if you would give it to our Secretariat and we'll consider this and we'll address it if need be tomorrow or the next day at one of the hearings. And we appreciate your bringing it to our attention.

So if the Secretariat could get a copy, we will rule on that afterwards.

MS. McCLENAGHAN: All right. Thank you.

CHAIRPERSON GRAHAM: Okay? Thank you.

Good evening ladies and gentlemen, we are going to start this evening by -- with the continuation of this afternoon's hearing with regard to procedural matters and the panel has made its decision with regard to the preliminary matters heard this afternoon.

Before I proceed with rending the panel's decision, I want to take the opportunity to

thank all the participants for their presentations.

I will provide a summary of these decisions with written reasons to the following at a later date, we'll have those available to you.

--- RULING BY THE PANEL:

CHAIRPERSON GRAHAM: First of all with regard to the request to suspend the hearing in light of what's happening in Japan. The concerns raised by the interveners were mainly in reaction to a message released by the Canadian Nuclear Safety Commission on March 16th, 2011.

Intervenors are concerned that the JRP will now consider new information and take into account lessons learned from the incident in Japan when lessons have not been identified.

Intervenors wanted to know if they would be provided with extra time and resources to review and respond to the potential new materials and how much time would intervenors be given to respond to this revised information.

The Joint Review Panel is aware of the confusion that the message has generated and wants to take this opportunity to clarify the approach and set the record straight.

The JRP or the Joint Review Panel

is fully aware of the tragic and complex events unfolding in Japan. The lessons learned will no doubt inform the regulatory supervision of the nuclear facilities in Canada and around the world in the future.

The outcomes will be analyzed, evaluated and applied at the time of the detailed reviews of design requirements and safety features. These elements would all be rigorously examined if and when the Proponent can apply to the Canadian Nuclear Safety Commission for a license to construct and operate.

As fully independent decision makers, it is only the members of the Joint Review Panel that will determine whether new information emanating from the events unfolding in Japan will be required within the context of this hearing.

And I want to make that very clear.

As noted, the issues of seismicity and safety is already included in the review and that information has been filed with the panel for its consideration and will be discussed during the hearings.

The panel has asked for broad

factual presentations of the situation in Japan for context. If the panel determines that new information is required for the discharge of its mandate, then the panel will provide appropriate direction including rules or procedure for the filing and considering of the information.

This could, as appropriate, include further opportunities for written submissions or for further hearing days.

The panel will continue to review the process until it is satisfied that it has all the relevant information to allow it to fulfill its mandate.

For these reasons, the panel has decided that at this point in time, there's no need to adjourn because of the events unfolding in Japan or to amend its hearing procedures.

On the next matter with regard to protected solicitor/client privilege -- I'm sorry -- with regard to this issue of sufficient evidence for an environmental assessment, in his presentation to the panel, intervenors submitted that there's insufficient information on the record upon which to base an environmental assessment and the hearings should be adjourned until the record

is complete.

It is provided in the agreement established -- it is provided in the agreement to establish a Joint Review Panel, the review requires the Joint Review Panel to discharge the requirements set out in the *Canadian Environmental Assessment Act* in carrying out the environmental assessment of the complete lifecycle of the project to obtain the information and evidence required for it to consider the license application under the *Nuclear Safety Control Act* and to obtain information and evidence about the adverse effects the project may have on potential or established aboriginal rights, title or treaty rights as identified in the JRP by potentially affected aboriginal groups.

The terms of reference do not say that the panel was to announce the public hearing portion or the review process when it had all the information it needed to make the environmental assessment recommendations.

If that were the case, it would effectively invalidate the legitimate need of holding public hearings. A public hearing is an additional opportunity to gather and test the

information.

The panel is of the opinion that it would be premature and inappropriate to decide before holding the public hearings whether it has enough information to write its report.

As mentioned previously, the objective of the public hearing is to allow the panel to hear from all the participants and gather all the information -- all the relevant information.

The panel rejects the intervenors' request to adjourn the proceeding on the basis that it does not have sufficient information on which to proceed.

Participants requested that the panel clarify whether the Candu 6 design is under consideration as part of the panel's review. Participants state that they have been expanding resources assessing the three potential reactor designs identified in OPG's EIS.

Adding a fourth potential reactor design without notice and at the end of the public review and the comment period on OPG's EIS would render the public consultation meaningless and deprive them of the opportunity to spend the

necessary time and resource to assess additional design options.

On October 8th, 2010, the Joint Review Panel responded to a similar issue raised by Northwatch, Safe and Green Energy, Mouvement Vert Mauricie, Lake Ontario Waterkeepers and the Canadian Environmental Law Association.

In its response, the panel stated that it failed to see how asking for considering information and various technologies including the Candu 6 in the environmental assessment process that is technologically neutral, amounts to change in the scope of the project being considered.

All participants have known since the beginning that absent a specific chosen technology, the review process would follow a plant perimeter envelope.

The technologies considered in the development of the plant perimeter envelope were selected to establish a set of design perimeters and associate limiting values used to describe the bounding futures but never to exclusion of all the technologies.

The panel is cognizant of the fact that the technologies that could ultimately be

selected for this project, should OPG be granted the authorization to proceed, might be different than those specifically mentioned in the proposal or the EIS.

The important thing to remember is the chosen design will have to be weighed against the parameters of the environmental assessment approval that may be granted.

At this time, the panel does not see the need to delay the hearing or refuse to consider the Candu 6 technology as part of its review.

But as was mentioned for the issues regarding Japan, the panel may as appropriate provide an opportunity to file additional submissions or schedule further hearing days on that issue also.

In the matter of CELA, requested that the Joint Review Panel should review the information from a proponent and agencies as sworn evidence.

The Joint Review Panel is not a court of law and as such not bound by the legal rules of evidence and has the discretion to review and accept evidence and information it considers

appropriate.

The panel's task is to consider any information it deems relevant and come to a reasonable conclusion on that information.

Under the present circumstances and especially considering that the co-request has been presented after all participants have filed their information, the panel considers it unnecessary to require that participants file sworn information.

Section 3.5 of the Public Hearing Procedures sets out the non-adversarial opportunity for a presenter to ask questions to other presenters through the intermediary of the panel chair. It specifically states that intervenors may seek leave of the chair to put a question to a presenter. This provision details limits on such questions including availability of time of course.

This provision also clearly states that anyone who registered to make a 10-minute oral statement will not be permitted to ask questions.

Intervenors may seek the chair's permission to ask a question while the panel members may ask a question of a presenter at any time. No one else is permitted to interrupt a

presenter with a question.

Intervenors who wish to present a question shall inform a member of the panel secretariat. The panel wants to make it clear that the panel has the authority to direct a question to a presenter and the consent of that presenter is not required. All presenters will be treated equally. Questions may be allowed at the end of the presentation but not during the presentation.

The panel has decided to allow participants the opportunity to file written final comments. The proposal details will be provided within the next several days.

The request is denied however -- pardon me, the request is denied; however, the panel wishes to mention that every effort was made to accommodate everyone. I guess I should have mentioned this, I'm sorry, as the matter providing transit -- on the subject of transit.

The request is denied; however, the panel wishes to mention that every effort was made to accommodate everyone in the scheduling or the presentation to help people make their travel arrangements.

With regard to the request to have

all written, visual materials including in transcripts translated to French, the request is denied. The panel has made numerous arrangements to provide simultaneous translation and ensure the proceedings are accessible to both public in French and in English.

With regard to the availability of transcripts, the panel publicly notices in hearing information sheets have all indicated that all written transcripts and audio recordings of the proceedings will be available on the Canadian Environmental Assessment Registry internet site.

Every effort will be made to ensure that these are posted as quickly as possible and subject to unforeseen technical difficulties, the panel secretary expects written transcripts and audiovisuals to be online within 24 hours of the individual session. The panel secretary is committed in making it happen as quickly and as fairly as possible.

That ladies and gentlemen is the decision of the panel with regard to the procedural motions that we had this afternoon. And as I said at the outset, these will be available to -- the written transcripts will be available to you in due

course.

Now, we will start this evening's procedures. And in starting I have some opening remarks that I would like to make to the general public and to participants.

--- REMARKS BY CHAIRPERSON GRAHAM:

CHAIRPERSON GRAHAM: Good evening ladies and gentlemen. Let me begin by introducing myself and I've done that two or three times already today, but I guess I'll introduce myself again.

My name is Alan Graham. I am the Chair of the Joint Review Panel established by the Ministry of the Environment and the President of the Canadian Nuclear Safety Commission.

With me this evening are the two Joint Review Panel members; to my right is Madame Jocelyne Beaudet and to my left is Mr. Ken Pereira. Each panel member was appointed to conduct this review in accordance with the Joint Review Panel agreement.

Regardless of our representative background and experience, we have undertaken these responsibilities with an open mind respective to everyone's ideas and perspectives.

I will begin my comments this evening by acknowledging the tragic and complex events unfolding in Japan. We would not be proceeding with the public hearings today if we believed that our mandate was unachievable in light of these events.

We are proceeding because we believe it is possible to collect all of the information we need to complete our environmental assessment for the site. The panel's decision to proceed today in no way limits our ability to take any additional measures we believe necessary to fulfill our mandate.

Having taken a technology-neutral bounding approach to the assessment or performance risks and impacts, this Joint Review Panel can proceed with its assessment and recommendations to the government on the likely impacts, mitigating measures and follow-up programs.

The lessons learned from the events in Japan will no doubt be evaluated in the fullness of time and when appropriately applied in the detailed reviews, design requirements and safety features that will be rigorously examined by the public if the proponents make a further

application for the construction licence to the Canadian Nuclear Safety Commission which will hold the public hearings.

I wish to thank, at this time, our host, Hope Fellowship Church, for this really exceptional facility. The Joint Review Panel agreement specified that the public hearing was to be held in Clarington.

It was a challenge to find a venue that was both available for three weeks steady and available to accommodate a large number of people like we have here tonight. We recognize that no venue could have met the needs of everyone with every interest -- with an interest in this matter.

We trust the alternatives for participating other than being here in person will ensure everyone -- will ensure access for everyone.

For those not available to be here in person, the panel made its best effort to provide all reasonable means for participating either by presenting by telephone conference, listening to the live audio by toll-free telephone, watching the webcast or consulting our written transcripts and audio files that will be available within the 24 hours at the end of each day's

proceedings.

We have arranged to have these proceedings video webcast for at least the next six days. Satellite webcasting is prohibitively expensive and we will make a determination of whether or not it is feasible to continue through the rest of the hearings. But as I said, it will be for the first six days.

The project that has brought us all together is a proposal by Ontario Power Generation for the site preparation, construction, operation, decommissioning and abandonment for up to four new nuclear reactors at the Darlington nuclear site located on the north shore of Lake Ontario in the Municipality of Clarington.

In accordance with the January 2009 guidelines for the preparation of the environmental impact assessment, OPG submitted its environmental impact statement or EIS, as I will refer to it, on September 30th, 2009.

OPG was directed to submit an EIS that identified the likely environmental effects, justify methods used to predict impacts, document the use of scientific, engineering and traditional and other knowledge and substantiate all

conclusions.

On October 30th, 2009 the Joint Review Panel was established pursuant to the *Canadian Environmental Assessment Act* and the *Nuclear Safety Control Act* to undertake the environmental assessment and regulatory review of this project.

The scope of the project for this environmental assessment includes all the phases of the project through to abandonment. However, the licence application relates only to the first phase of the project, namely site preparation.

The dual mandate of the Joint Review Panel has been and continues to be both the evaluation of information relating to the environmental assessment, as well as the information submitted by OPG in support of their application for the licence to prepare a site for a Class 1 nuclear facility.

Detailed licence conditions relating to the construction and operation of a nuclear power plant are outside the scope of this panel's mandate and may be addressed at future public hearings in the event that the project is authorized to go ahead.

The authority to hold public hearings and make a decision on the licence application for both the construction and operation of a new nuclear power plant rests exclusively with the Canadian Nuclear Safety Commission.

Commencing today, the Joint Review Panel has set aside three weeks of public hearings to gather and receive information. We need to complete our mandate.

The hearing will also serve to provide an additional opportunity for OPG to explain their project and its potential effects for the hearing participants to present -- I'm sorry, I should start again.

The hearing will also serve to provide an additional opportunity for OPG to explain their project and its potential effects for hearing participants to present their views and recommendations.

No single phase of this review has the capacity to meet all the needs. The review of the EIS, the answers to the panel's request for additional information and the information collected during the public hearings will collectively provide the panel with the information

we require to carry out our environmental assessment and licensing functions.

Our report to government will not be written or submitted until the panel is satisfied that all of the information -- that we have all of the information that is needed.

Following this hearing and in -- in -- following this hearing and the close of the public record the Joint Review Panel will prepare a record that includes, but not limited to the rationale, conclusions and recommendations of the panel relating to the environmental assessment of the project, including any mitigating measures and follow-up programs.

This report will be submitted to the Minister of Environment and made available to the public within 90 days of the close of the record.

Any action of this Panel regarding OPG’s application for a licence to prepare a site is conditional upon the Government of Canada’s response to our report.

To be clear, in its report, the Joint Review Panel will make recommendations to the government with respect to the potential of the

project to cause significant adverse environmental effects.

Then, depending on the government's response to the recommendation, the panel will make a decision and issue a Record of Proceedings on the application of the licence to prepare a site.

The EIS Guidelines noted the importance of ensuring that traditional knowledge and meaningful Aboriginal consultation by both OPG and federal authorities are part of the review.

OPG was specifically required to document its engagement of Aboriginal people that may be affected by this project, the history of OPG's relationship with Aboriginal people in relation to the site, as well as any issues or concerns raised during discussions.

The Canadian Nuclear Safety Commission has outlined the federal government's Aboriginal consultation in their documentation filed for this hearing.

In addition, we will be hearing from several Aboriginal groups over the course of these proceedings.

Throughout the public review and

comment period, the Joint Review Panel has undertaken a detailed review of OPG's EIS required -- pardon me, requested -- start again.

Throughout the public review and comment period, the Joint Review Panel has undertaken a detailed review of OPG's EIS, requested a broad range of additional information and carefully considered recommendations from government departments, Aboriginal groups, non-government organizations and individual members of the public.

Every recommendation to the Panel outlined a request for additional information was carefully considered and all decisions on whether to forward any information requests were based on both the panel's mandate and the need for the proposed information.

To assist with the review, the Panel held three public information sessions in the project areas and held two webcast technical information sessions in December 2009, and June 2010.

The project registry for this review is housed in the Canadian Environmental Assessment Agency's website. There you will find

almost every single document relating to the review, including virtually all documents submitted for this evening.

Only a small number of documents were protected from public disclosure for reasons of security, privacy or commercial confidentiality.

The Joint Review Panel is committed to be transparent in a timely access to documents reviewed during the course of the review.

Where the Panel believes that we need an independent, outside expert to provide information on specific issues, we exercised our rights to retain an outside expert. In this regard, the panel specifically asked Pacific Northwest National Laboratories to provide an independent expert evaluation relating to the adequacy and of the assessment of cooling towers for condensed cooling.

Further information regarding the statement of work and final review prepared by PNNL are available on the project registry.

The Panel encourages registered public hearing participants to address the PNNL report during their oral presentations.

Our January 2011, notice regarding

this hearing indicated that it would address several broad themes; namely, aquatic biota and habitat, emissions, human health, land use and management and conjunctional nuclear waste. It is not intended to be an exclusive and the subjects may be covered -- other subjects may be covered over these hearings -- during these hearings.

It is the Joint Review Panel's intention to remain flexible and to respect our presenters.

Just because a particular subject area might have been covered at one stage of this hearing doesn't mean it can't come up again in presentations or questions at a later date.

If you have provided comments in writing, there's no need to read them to the panel. Rest assured that everyone's written submission has been carefully considered by the panel.

If someone before you has presented the same views and information you intended to present, it is not necessary to repeat what has been said. We would encourage you, however, to state instead your support for the other person's views.

Our goal is to hear from everyone

who wishes to contribute to this review, whether it is by filing a written submission, registering to speak, please note the Joint Review Panel has given a very clear and specific mandate, namely to examine the environmental effects of this project, consider feasible measures to mitigate the Aboriginal effect and to determine the need and requirements of any follow-up programs.

All information presented at this hearing, as well as all comments and questions, must respect and reflect the mandate of this panel. The panel has been opened to receiving all written submissions, whether or not they fall within the panel's mandate.

However, presenters are advised that they will be asked to focus their comments on matters relating directly to the proposed project and the panel's mandate.

For those people who did not register to speak, there may be an opportunity to make an oral brief, if we have the time available and I've got to emphasize that, if the time is available. This opportunity is -- available to all those people who have not already registered. Please speak to the staff from the Panel

Secretariat and we will try to find time at the end of each -- or end of some of the sessions for brief presentations.

This project has attracted a great deal of attention, both in support and in opposition. The panel's hope is that we will all listen to everyone, what everyone has to say in respect for and also in a very calm manner.

My goal is to preside over a co-operative, flexible process where it is widely understood and accepted that there will be no hostile questions and no cross-examination of speakers. We're not a court of law, and we will therefore not impose court practices that add no value to these proceedings. Everyone has the right to feel welcome, be respected regardless of their point of view. This hearing will proceed in a fair and equitable manner.

We all have a duty to speak honestly, question respectful, and listen patiently. The balance of this evening session will be to allow OPG to provide a broad overview of this project, followed by any -- followed by questions on any aspect of its presentation. The Joint Review Panel will lead off the question, and

then will provide the opportunity for registered intervenors to pose questions.

OPG may be called upon at different stages to speak to specific subjects and is also expected to answer questions throughout the three weeks of these hearings. It is explained at the Panel's December 2010 public hearing procedure, only intervenors registered to make written and all presentations are permitted to -- are permitted to present proposed questions through the Chair. Please register with the Secretariat staff if you would like an opportunity to present a question.

We will resume tomorrow at 9 a.m. with a presentation by the Canadian Environmental Assessment Agency, followed by a presentation by the Canadian Nuclear Safety Commission, first on the environmental assessment; and second, regarding the licence application.

OPG will make a short presentation on their application for a licence to prepare the site before the presentation by CNSC staff. These presentations will be followed by questions.

A preliminary schedule was released on February 23rd, 2011. A detailed

schedule listing all registered participants was released on March 10th, 2011, and a revised schedule with participant PMD numbers, so which we call PMD numbers was released on March 16th, 2011. We will make every effort to abide by this.

All participants who are registered to speak are also listed on the daily schedule available online and at the back of the room. Participants will be called upon to make their presentation in the order in which they are listed. Presenters are expected to be in the room at the start of the session for which they have been scheduled. Please remain flexible and patient while you wait for your turn to speak.

At this time I would like to introduce a few members of the Panel Secretariat. Next to me on my left, is Kelly McGee, the Panel's co-manager. To my right is the Panel's counsel, Denis Saumure. Our co-manager, which was on the Panel -- on the stage here with me this afternoon, Debra Myles, is at the back of the room. The Panel's manager of communications is Madam Lucille Jamault, and she is also in the back of the room, as is Julie Bouchard, our tribunal administrator. And we also have analyst, David Haddon and Michael

Young.

The Secretariat has prepared a fact that is available online and printed copies are also at the back of the room. The fact sheet lays out the logistical and technical aspects of the hearing and the venue. Please take the time to read the fact sheet, and if you require further information or have any questions, I would encourage you to speak to some of our Secretariat staff that I had introduced.

Let me close by saying to everyone here tonight, to everyone listening to our audiocast or watching the video webcast, and to everyone who took time to send us their views in writing, welcome and thank you.

Now, I will turn to my co-manager for her comments.

--- REMARKS BY MS. KELLY McGEE:

MS. MYLES: Bonsoir mesdames et messieurs, good evening everyone, welcome to the public hearing of the Darlington Nuclear Power Plant Project Joint Review Panel. I wish to note at this time that in addition to the presentation scheduled for tomorrow’s session, we will have presentations in the morning from the Canadian

Nuclear Safety Commission, Natural Resources Canada, and OPG, specifically on the issues related to Japan and seismicity. Other than that tomorrow's schedule will proceed as follows -- as previously published.

Mon nom est Kelly McGee, je suis la co-gestionnaire de la Commission d'examen conjoint du projet de la nouvelle centrale nucléaire de Darlington et j'aimerais aborder certains aspects touchant le déroulement des audiences.

We have simultaneous translation, the headsets are available at the reception at the back of the room. The English is on channel 1, and the French -- des appareils de traduction sont disponibles à la réception, la version française est au poste 2.

Please keep the pace of your speech relatively slow so that the translators can keep up.

Les audiences sont enregistrées et transcrites textuellement. Les transcriptions se font dans l'une ou l'autre des langues officielles compte tenu de la langue utilisée par le participant à l'audience publique.

Les transcriptions et les enregistrements audio seront disponibles sur le site web de l'Agence canadienne d'évaluation environnementale.

A written transcript is being created for these proceedings, and will reflect the official language used by each speaker. The transcripts and audio recordings will be posted on the Canadian Environmental Assessment Agency website for this project, and the webcast will be archived on the Canadian Nuclear Safety Commission website. To make the transcripts as meaningful as possible, we would ask everyone to identify themselves before speaking. As a courtesy to others in the room, please silence your cell phones and other electronic devices.

I'd now like to take a couple of minutes to address a few logistical matters. The project proponent, Ontario Power Generation, is seated to my right. Staff from the Canadian Nuclear Safety Commission is seated to my left. Other government departments and agencies may at certain times also be seated to my left, and the seats and table in the middle are reserved for those people who are making presentations to the

Panel. In the event of an emergency, you may exit the building through the door at the back where you came in, or through the additional emergency exits at the back of the room.

The Panel announced the scheduling of this hearing on December 14th, 2010. Interested parties were offered three choices for participation. People had the option to file a written submission, to file a written submission and make an oral presentation, or to make an oral statement without written documentation. The Joint Review Panel members may ask questions at any time during the hearing, only the proponent, government participants and intervenors registered to provide both oral and written submissions may be permitted to seek the permission of the Chair to put a question to someone who has just finished an oral presentation.

Questions from registered intervenors shall be directed, as I said, to the Chair, who may pose the question to the presenter or allow the question to be put directly to the presenter. Opportunities to ask questions will be subject to the availability of time.

The Chair may limit or exclude

questions that fall outside the Joint Review Panel's mandate, or unneedlessly repetitive. Registered intervenors wishing to recommend a question should first speak to a member of the Panel Secretariat at the back of the room. Anyone who did not register to participate may speak with the staff of the Panel Secretariat as well, and ask that their name be added to a list of last-minute oral presenters. An opportunity to make a brief statement at the end of the session may be granted if time permits, and the length of any such presentation will be determined by the Chair in a fair and equitable manner.

Mr. Allan Graham, the Chair of the Joint Review Panel, will preside at the public hearing. Mr. Graham.

CHAIRPERSON GRAHAM: Thank you very much, Kelly. And now as all of the -- the speeches, we'll now start with the -- the meat of the hearing, and as per the agenda, we will start with the presentation of OPG, Mr. Sweetnam, the floor is yours, and you may want to introduce some of your staff.

--- PRESENTATION FROM ONTARIO POWER GENERATION BY MR. ALBERT SWEETNAM AND MS. LAURIE SWAMI:

MR. SWEETNAM: Thank you, Chairman Graham, and good evening to both you and Panel members body.

For the record, my name is Albert Sweetnam. I'm the executive vice president and project manager for the Darlington New Nuclear Project. I'm responsible for and accountable to the president and chief executive officer and the board of directors of OPG to establish and implement this project.

Before I begin our presentation, I would like to take a few moments to address the tragic events in Japan. Our thoughts and prayers go out to the people of Japan and relatives here in Canada during their time of national crisis.

Japan is facing what literally can be considered a worst case natural disaster beyond anything that we would ever need to manage here in Ontario. It is important to remember that a series of independent studies have confirmed that Durham region is an area of low seismic risk.

Many other studies have demonstrated that our reactors are robust in design and able to withstand large seismic events. Our plants are designed to ensure many concurrent

events happening together would not impact the ability to safely operate and shutdown. We use a highly conservative and precautionary approach to safety.

OPG, like everyone in the global nuclear industry, will incorporate lessons learned from the Japanese experience to make nuclear energy even safer. Continuous learning is a cornerstone of our industry. OPG is today in the early stages of the approval process for a new nuclear plant. That approval process is precautionary and adaptive. It is also lengthy. A new plant cannot be built and be operational at Darlington for almost a decade.

During that time, there are many decisions that need to be made. Three separate licenses must be obtained under the *Nuclear Safety and Control Act*. At least two more public hearings will be conducted. Information will be scrutinized in an open and transparent manner.

New information is constantly brought forward and incorporated into these approval processes. We, like all of the nuclear industry, are reviewing the Japanese operating experience on an ongoing basis. We are using this

information to confirm the safety of our current plans.

Once all the facts about the events in Japan are known, the information will be available to the decision makers in licensing steps over the next decade.

With me tonight are Laurie Swami, Director of Licensing and Environment, and John Peters, Environmental Assessment Manager. Many other OPG staff of our consulting team are available tonight and over the next few weeks to answer any specific questions that you may have.

This is a –- I will need to be away from the hearing from time to time. This is in no way a reflection of the seriousness or importance of these hearings to OPG. In my absence, Ms. Swami has the authority to act on my behalf.

Tonight’s presentation reflects the results of almost five years of hard work by OPG with extensive involvement from the Municipality of Clarington, its area residents, and all the key stakeholders. It also shows how OPG and its partners will build on these efforts to ensure the long-term success of the Darlington New

Nuclear Project.

Our presentation is in support of our application for a license to prepare the site for the Darlington New Nuclear Project. A prerequisite to that licensing decision is the successful completion of the environmental assessment.

This evening, I will begin our presentation with a description of OPG and our role in implementing the Province of Ontario's energy policy. I will also provide an overview of what the Darlington New Nuclear Project will accomplish and how it will be managed. I will then turn over the presentation to Laurie Swami who will describe the project and explain the basis of our conclusion that given available mitigation, the project will not result in any significant adverse environmental effects.

Following Ms. Swami's presentation, I will describe how OPG will carry out the project safely and with due regard for the protection of the environment. I will conclude by summarizing OPG's commitments in support of the EA and the license application.

OPG is an Ontario-based

electricity generation company whose principal business is the generation and sale of electricity in Ontario. Our focus is the efficient production and sale of electricity from our generation assets while operating in a safe, open, and environmentally responsible manner. OPG was established in 1999 under the *Ontario Business Corporations Act*. It is wholly owned by the Province of Ontario.

As of December the 30th, 2010, OPG's electrical generating portfolio had an inservice capacity of approximately 20,000 megawatts making us one of the largest power generators in North America.

OPG supplies approximately two-thirds of Ontario's electricity and is effectively the steward of over $27 billion in assets owned by the people of Ontario. We are proud of our qualified and skilled staff who number approximately 12,000, including a significant number who are represented by the Power Workers Union and the Society of Energy Professionals.

Safety is our number one priority. In more than 35 years of operating our nuclear facilities, a member of the public has never been

harmed from our operations. OPG's priority is to safely operate our facilities in a manner that minimizes impact on the environment.

All of OPG's nuclear operation is registered to the internationally recognized ISO 14001 Standards for environmental management systems. This voluntary standard directs our actions and demonstrates a high standard of environmental responsibility, including radiological safety.

Last June, OPG became the first employer in Ontario to be awarded the Zero Quests Platinum award from the Infrastructure Health and Safety Association. This award is the highest level of recognition a company can achieve in the Zero Quest program and recognizes OPG's efforts to sustain and continuously improve our safety performance, health and safety management systems, and safety culture.

OPG's safety performance rests on three critical pillars; our safety culture, our safety management systems, and a strong partnership that we have with our unions. OPG's future is grounded in our total commitment to safety excellence.

We have also been recognized for our efforts in biodiversity. OPG has helped create and care for wetlands, woodlands, green spaces, and nature trails across the province. The Wildlife Habitat Council has recognized OPG with the prestigious William W. Howard Award for efforts across the entire organization in conservation, education, and outreach.

Almost five years ago, the Province of Ontario adopted a policy to maintain the nuclear generation component of Ontario's baseload electricity supply at a level consistent with current installed capacity. The province recognized that this would require a combination of refurbishment and new build. In recognition of the long lead times required for licensing approvals, OPG was directed to begin the federal approvals process, including an environmental assessment for new nuclear units at an existing site.

The Ontario government subsequently confirmed its support for upward bound of 4,800 megawatts for EA planning purposes, and a selection of the Darlington site as the location for the new build project.

In November 2010, the Province of

Ontario announced its updated long-term energy plan. That plan reaffirmed the government's commitment to nuclear power, supplying approximately 50 percent of the province's baseload electricity supply.

Infrastructure Ontario an arm's-length Crown Corporation dedicated to the renewal of the province's public assets and infrastructure started a competitive nuclear reactor vendor procurement process in 2006. By 2008, the province was actively engaged in a request for proposal process with selected vendors. The final stages of those negotiations are anticipated during this year. OPG is preparing for the management and oversight of a significant capital extensive infrastructure project consistent with our commercial obligations and a nuclear regulatory environment.

OPG is accountable for ensuring that the new nuclear plant will operate safely and reliably for its expected life.

Our vision is to bring the Darlington New Nuclear Project to service by ensuring that the best standards of safety, quality, and project management are applied. Our

mission is to operate safely to site, to license, and accept a nuclear power station in the Darlington site that operates reliably at high capability factors for its expected life and meets all environmental health, security, economic and quality requirements.

The OPG will be the operator of the new plant and the licence holder. OPG will designate an engineering procurement and construction company or EPC firm, the activities of engineering, purchasing all items and services, constructing and commissioning the new nuclear plant. OPG is accountable for the project management and oversight of the EPC firm.

The Darlington new nuclear management system provides assurance that the new nuclear plant will be engineered, purchased, constructed, commissioned and turned over in accordance with the requirements of the Canadian Standards Association's standard N286-05, Management Systems requirements for Nuclear Power Plants.

I would like to briefly review the regulatory framework for the new nuclear plants to help distinguish today's public hearing from future

proceedings that will come before the CNSC.

As noted earlier, the regulations for Class 1 nuclear facilities specify that separate licenses are required for each of the five stages in the lifecycle of a nuclear plant.

Detailed information requirements are specificied for each licensing stage consistent with the approval sought.

At this hearing, we're seeking a licence to prepare the site for construction. In order to issue a licence, the panel must be satisfied that it is feasible to perform the site preparation activities in a manner that will satisfy all health, safety, security and environmental protection requirements.

The panel must also confirm whether the site is suitable for a new nuclear power plant. In our presentations, we will review the extensive and detailed assessments undertaken on seismic hazards, flood hazards including the potential for tsunamis and hazards from other extreme weather events. Tomorrow, you will hear more details about OPG's seismic hazard assessment.

For the construction licence, we must provide a detailed description of the proposed

design for the nuclear power plant. It is at this stage we will seek approval for a specific reactor type. It is also where OPG will provide a design that is optimized in accordance with the many other commitments that we will discuss tonight and over the coming days.

For the operating licence, we must provide a detailed description of the structures, systems and equipment at the nuclear power plant including their design and operating conditions. We anticipate that further optimization could also occur at this stage.

The consideration of each of these subsequent licence applications follows the CNSC public hearing process ensuring an open and transparent decision-making process. The newly created CNSC Participant Funding Program will also be helpful in this regard.

Before any licensing decision can be made with respect of new nuclear power plant, the EA must be completed. The EA and site preparation licence have overlapping but distinct information requirements.

Let me tell you what we have done. On September the 21st, 2006, OPG submitted to the

CNSC an application for approval to prepare a site for the future construction of a nuclear power generating facility with up to four nuclear reactors and up to 4,800 megawatts of power in the municipality of Clarington.

At the same time, we notified the public, aboriginal communities and those potentially affected by the project. Shortly thereafter the CNSC confirmed that the project was a type for which an environmental assessment would be required before any licence could be granted.

OPG also started discussions with other federal regulators about a number of other federal approvals that will be required to proceed with the project.

In addition to federal approvals required, OPG has identified over 50 other provincial and municipal approvals that are required.

OPG is committed to working with all of the regulators to ensure that the appropriate approvals are obtained.

I would now like to describe OPG's part in the federal EA process. The EA was undertaken as early as practicable in the planning

process for the project.

Baseline environmental studies at the Darlington site started in the fall of 2006. And over the course of the next few years, we completed work to characterize the existing environment, to describe the range of project works and activities that might result in a change to the environment and assess the potential effects and identify appropriate mitigations.

In January 2009, the final EIS guidelines were issued by the Federal Minister of Environment; those guidelines guided the completion of our EA work.

Our technical work was supported throughout the EIS process by an extensive consultation program. Our environmental impacts statement and the supporting technical support documents comprising some 10,000 pages of material were submitted to the panel in September 2009. All requirements of the EIS guidelines were addressed in these documents.

OPG concluded that the project will not result in any significant adverse environmental effects.

Following submission of the EIS,

we responded to the panel's information request, continued ongoing monitoring activities and undertook additional studies and analysis to address specific issues. You will hear about some of that work from Ms. Swami.

One of the primary points of discussion since submission of the EIS has been OPG's choice of cooling water technology. We will deal with this issue several times in our presentations.

I would like to take a few moments now to outline our position for the panel. Of the condenser cooling options that we evaluated, once-through cooling is the best cooling option for the Darlington site.

Once-through cooling has the lowest environmental impact compared to the other alternatives. Once-through cooling has the smallest overall project footprint.

It will provide OPG with the flexibility to optimize the site layout. It will permit us to reduce the extent of our excavation. It will provide us with the ability to maximize preservation of bank swallow habitat.

Most importantly, once-through

cooling will allow us to reduce the amount of lake fill required for the project. A project without cooling towers will allow us to limit lake fill to about 19 hectares which would comply with the two-meter depth contour recommended by the Department of Fisheries and Oceans and the CNSC staff.

The once-cooling water system at the existing Darlington nuclear power station is recognized as state-of-the-art design for lake water cooling.

We acknowledge change over the years, we know that we can make this design even better.

OPG commits to incorporating design features to reduce infringement, impingement and thermal emissions to further mitigate any residual effects of once-through cooling. Once-through cooling is the most energy efficient option with the lowest overall cost.

Finally, the concerns of our community are very important to OPG. The communities in the municipality of Clarington and the region of Durham are against inclusion of cooling towers in this project.

OPG's choice of once-through lake

water cooling respects community concerns regarding the use of cooling towers at Darlington.

To put things in context, OPG is seeking approval to prepare the Darlington new nuclear site for up to four reactors and/or 4,800 megawatts and all of the associated facilities, once-through lake water cooling and lake infill to a depth of about two meters provided that the project proceeds with once-through cooling.

OPG commits to optimizing the site layout during the detail design for the project. OPG also commits to a large number of other initiatives going forward.

I would like to summarize a few of them now.

We will finalize an aquatic habitat compensation plan focused on south Durham region. A component of that plan is the round whitefish action plan on which we will continue to work in collaboration with a variety of federal, provincial and municipal agencies. You will hear more about this in our presentation on aquatic habitat and biota on Wednesday.

We will pursue the best available technology that’s economically achievable in the

detailed design of the once-through cooling water intake and discharge structures.

We will continue to participate in the Bank Swallow Working Group managed by Bird Studies Canada.

We are continuing to undertake further archaeology inherited investigations in the Darlington new nuclear site.

We will continue to involve our community in the project every step of the way including working closely with the local and regional municipalities on traffic-management planning.

Before asking Laurie Swami to provide a more detailed overview of the EA, I would like to reiterate that I am committed to and accountable for effectiveness and continual improvement of the management system for the project.

I hold my management team accountable to the requirements of the project management system ensuring that safety is the paramount consideration guiding all decisions and actions.

I ensure that my management team

fosters the desired safety culture by defining and implementing practices that contribute to the excellence and performance through the management system. And I ensure effective implementation through independent assessments.

There are many facets to the successful implementation of a major capital project. Today and over the next few weeks, we will be focusing on the environmental assessment and the site preparation licence.

OPG is confident that upon completion of this public review and following receipt of the licence to prepare the site, we will be well placed to take the next critical steps to bring the Darlington new nuclear project to service.

Thank you.

I will now turn the presentation over to Laurie Swami who will provide an overview on the EA.

MS. SWAMI: Thank you and good evening. My name is Laurie Swami and I am the Director of Licensing and Environment for the Darlington new nuclear project for OPG.

I will provide you with an

overview of the work that we've undertaken in support of the environmental assessment of the Darlington new nuclear project; a project for up to four new nuclear units and/or up to 4,800 megawatts of power, enough to serve a city of approximately two and a half million people.

The existing environment is influenced by the history of developments on and near the Darlington nuclear site. There is evidence of the use of the Lake Ontario north shore by First Nations peoples dating back thousands of years. Much of that history is passed down through old traditions within the First Nations community.

By the late 1700s, the Darlington and Clarke Townships were created and the current Darlington nuclear site lands were patented for agricultural use. They were used by successor farmer families for approximately 200 years.

Clarington and Oshawa are part of the Regional Municipality of Durham, an upper-tier municipal government comprised of eight municipalities.

In 1971, the Darlington site was acquired for power production of up to 12,000 megawatts. This slide shows the site as it was in

1976 prior to any construction at our facility.

Nuclear power production began at the Darlington Nuclear Generating Station in 1990 with all units in service by 1993. In 2008, it was confirmed by the Province of Ontario as the new build site.

This slide shows the location of the Darlington nuclear site in the Municipality of Clarington. The site hosts the existing Darlington Nuclear Generating Station as well as the Darlington Waste Management Facility which began operating in 2007.

The property is bisected north from south by the CN rail line and east from west by Holt Road, a major access road to the site.

The proposed site for the Darlington new nuclear project is on the eastern portion of OPG’s Darlington nuclear site outlined for illustration purposes in yellow on this slide.

The northern edge of the OPG property borders on Highway 401, a six-lane highway. Further to the north there are a number of agricultural properties. Immediately to the south of the site is Lake Ontario.

The properties immediately to the

west of our site include a number of industrial facilities. The Clarington Energy Park, the proposed Durham York Energy from Waste Facility and Darlington Provincial Park are further to the west of our site.

Immediately to the east of our site is Darlington Creek and St. Mary's Cement.

The photo on this slide shows the prepared Darlington Nuclear Generating Station site prior to any construction.

For EA purposes, the project includes preparation of the Darlington site for the reactors, construction and operation and maintenance of nuclear reactors and associated facilities for approximately 60 years of full power generation including mid-life refurbishment and/or replacement of major components, construction and operation and maintenance of appropriate waste management facilities and preliminary planning for decommissioning and eventual abandonment of the nuclear reactors and associated facilities.

This slide depicts a generic nuclear station layout. It illustrates in very general terms the principle buildings, components and facilities associated with a nuclear plant.

These include the reactor building and turbine generator building which we refer to collectively as the “power block”, a used fuel dry storage building like the existing Darlington Waste Management Facility, a radioactive waste storage building used for the storage of low-and-intermediate-level waste and other facilities such as an administration building, security, warehousing and fencing.

As the province has not yet selected a reactor for EA purposes, we define the project in terms of a bounding assessment framework which combine values representing the various technologies under consideration. The bounding framework incorporates a plant parameter envelope or PPE that delimits key features of the project.

This approach is consistent with CNSC information guide, INFO-0756, licensing process for new nuclear power plants in Canada which does not require selection of a reactor technology at this step in the licensing process.

The PPE represents a broad, conservative framework for the environmental assessment. And any technology that is subsequently selected by the province that fits

within the bounding framework has also been assessed even if not used in its development.

The PPE was revised slightly during the review period following evaluation of AECL's enhanced Candu 6 or EC-6 reactor technology by CNSC staff. When no fundamental barriers to licensing were found, OPG was requested to evaluate the EC-6 against the established bounding framework used in the EIS.

We first confirmed that the EC-6 was well within all safety and regulatory limits. On August 30th, we reported to the panel that the EC-6 fit within the bounding framework except for a few PPE values and that changing those values would not change the conclusion of the EIS.

The PPE revision created no new environmental or safety effects. It did not change the risk to the public or workers or the environment. We found no need for additional mitigation.

We then extended the bounding framework to account for the EC-6 and filed an updated PPE report with the panel.

In summary, our findings related to the nuclear aspects of the project remain valid

and applicable for the EC-6 technology. The effects-assessment program was informed and validated by an extensive and comprehensive communication and consultation program meeting or exceeding the requirements of all relevant guidelines and regulations.

We sought to ensure that all potentially affected by the project were aware of it, that an EA was underway and that they had an opportunity to participate if they chose to.

A parallel but distinct program was offered to First Nations and Métis communities. We used a variety of communication and outreach tools, including sending out notices and update letters to everyone on our project mailing list which was updated regularly.

We did 10 direct mail outs to 95,000 homes and businesses in Clarington and Oshawa and placed over 130 newspaper ads in local and regional newspapers.

We undertook regular updates to municipal and regional councils. We also provided funding to enable municipal councils to undertake independent peer reviews and to enable new knowledge to be brought to the EA.

We opened a community resource centre in Downtown Bowmanville. It is open five days a week. To date, we have had over 3,000 visitors.

We sought input into the EA through interviews with key stakeholders. We met many times with existing community committees such as the Darlington Nuclear Health Committee, the Darlington Site Planning Committee and the Pickering Community Advisory Council.

We held workshops and special roundtable dialogues with the committees on topics of interest to them.

OPG sought input form the City of Oshawa, the Municipality of Clarington and the Region of Durham, each of whom was offered an opportunity to undertake independent technical peer reviews of our work.

The two local municipalities hired qualified experts to review OPG's work, to question the assumptions and to assess whether the work was consistent with professional practice. Both municipalities provided detailed comments and through dialogue and as reported to the panel, all of their comments have been dispositioned.

We used community feedback in each step of the EA. In a number of areas, we adjusted our studies. We also adjusted how we did the EA to ensure that the feedback that we received was built into the final submission.

By participating, people had the opportunity to influence the work that we're reporting on today.

Given the overall level of interest in our work, the number of concerns that were expressed and the feedback that we've received, we are confident in saying that there is a high degree of community support for the Darlington new nuclear project.

Following the March 11th events in Japan, we have been tracking community inquiries and can report there is no increase -- there is an increase in questions about the events in Japan and the likelihood of their occurrence here.

OPG continues to work today with the municipalities to ensure that the project outcomes are positive and to continue to be addressed in a routine basis.

This will include addressing such issues as traffic and transportation effects

associated with site preparation and construction.

OPG applied a systematic approach in preparing the EIS. Our approach complied with the requirements of the EIS guidelines, utilized best EA practices and incorporated a precautionary approach.

As shown on the slide, the EIS process considered environmental effects in a wide range of biophysical and socioeconomic areas. It also included consideration of accidents and malfunctions.

The process was documented in the EIS. Each step was informed through the consultation process and all work was documented and incorporated into the final Environmental Impact Statement.

We undertook detailed studies on all aspects of the environment consistent with the EIS guidelines. Those studies were built on extensive baseline data developed from earlier EAs and other work undertaken at the Darlington nuclear site.

Over 100 studies were completed by our highly qualified team of professionals. Many of those professionals are with us tonight or will

be present over the next few days.

Data was collected both on and off site, in many cases stretching over multiple seasons or even years.

Our specialists used the most modern standards in modeling and effects projection. In some cases, we engaged in cutting-edge research where our work has now advanced this state of knowledge.

An example of this may be found in the aquatic area where we continue to expand the state of knowledge on the round whitefish. Another example is the state of knowledge about bank swallows.

All of our detailed studies were peer-reviewed by other specialists before they were finalized. Our studies were also the subject of independent reviews carried out by experts retained by the municipalities.

In total, we identified about 200 areas of possible environmental effects associated with construction and operation of the Darlington new nuclear project. The majority of adverse environmental effects identified can be effectively mitigated and managed.

In large part, this is due to the enhanced designs of the reactors under consideration which ensure safety and environmental protection. After mitigation, we found that there were 12 residual adverse environmental effects. We then assessed those 12 effects for significance.

Before I describe it in some detail, I would like to describe some of the findings that did not factor into our significance assessment.

In the area of public safety and health, OPG conducted a comprehensive assessment of potential effects that considered normal plant operating conditions and malfunctions and accidents.

We concluded that the Darlington new nuclear project will not result in significant adverse effects on the physical, mental or social health of humans. We estimated that the maximum radiation doses to the public from the project will be less than 0.5 percent of the regulatory dose limit.

We will continue to measure public exposure to radiation through our Radiological Environmental Monitoring Program, or REMP. Each

year, as a condition of our current licence, we report the monitoring results to the CNSC and the public.

The panel will hear more about this subject in the session on human health and safety on Thursday afternoon.

In the area of worker health and safety, we concluded that doses to nuclear energy workers will be maintained below the regulatory dose limit.

Physical health risks to workers associated with the project can be mitigated through proven design, management practices and application of the ALARA principle.

The ALARA principle is an acronym for as low as reasonably achievable. It drives OPG's commitment to continuous improvement in reducing occupational dose for staff.

We are proud to say that in 2008, Darlington nuclear generating station was recognized by its international industry peers with the world-class ALARA Performance Award for exemplary performance in this area which can be credited to extensive ALARA planning, communication and innovative shielding techniques.

OPG's strength and application of ALARA is one of the means by which we assure and reinforce our commitment to worker health and safety.

Building on the corporate commitment to sustainability described by Mr. Sweetnam, OPG undertook a sustainability assessment of the project as a component of our EA work. This was important and leading edge work.

Sustainability was defined in the context of the community's visions, goals and objectives taken from the sustainable development plans and strategies articulated by Clarington, Oshawa and Durham Region.

This provides a framework to assess sustainability based on shared values. The results of the sustainability assessment are presented in the EIS in the form of a score card or matrix, an example of which is shown at the bottom of the slide.

The assessment concluded that, on balance, the project can enhance progress towards sustainability largely through economic and social means, while not diminishing overall progress from an ecological perspective.

Following the Environment Canada and Canadian Council of Ministers of the Environment Guidelines, we undertook a nuclear ecological risk assessment to assess the potential impacts of the project on the health on non-human biota.

After examination of a range of chemical and radiological parameters, we concluded that there would be no adverse effects to non-human biota from exposure to conventional or radiological contaminants.

As required by the EIS guidelines, we undertook a comprehensive assessment of credible malfunctions and accidents. We assessed a range of conventional malfunctions and accidents, nuclear malfunctions and accidents including radiological, transportation and out-of-core critically events.

As part of this analysis, we undertook evacuation time estimates. We demonstrated and confirmed that the entire population within 10 kilometres of the site can be safely evacuated. You will hear more about this issue on our presentation on land use on Thursday.

We concluded that there were no residual adverse environmental effects related to

malfunctions and accidents.

We also considered in the analysis a range of mitigation measures including robust reactor design enhancements that meet or exceed safety standards including those contained in CNSC regulatory document 337.

We also incorporated the principles of deafening depth and multiple barriers as depicted on the slide. Nuclear plants are designed, constructed and operated with the utmost concern for safety of the public, workers and the environment.

The design includes multiple barriers, special safety systems that can quickly shutdown the plant, maintain containment and cooling in the event of a nuclear accident.

We also considered the effects of climate change throughout our work. In particular we recognized the potential changes to aquatic habitat and biota. The assessment concluded that the predicted future climate change conditions would not affect the physical structures or systems associated with the project.

We recognize the inherent uncertainties associated with predicting the

impacts of climate change and we'll take a conservative approach to establishing design requirements for the project.

Based on public and stakeholder input, we identified and addressed over 30 projects in our cumulative effects assessment. We then focused on several key projects in the south Clarington area; some of those are depicted on the slide.

Our assessment concluded that mitigation measures will be effective in addressing cumulative effects.

In our assessment of environmental effects, we also considered the effects of the Darlington new nuclear project on planned and projected population growth in Durham region.

This slide depicts the regional population projection through to the year 2056. The blue segment at the top of each bar indicates the expected population growth associated with our project. As you can see, population growth attributable to the project is relatively insignificant over the planning period.

At this point, I would like to return to the evaluation of residual adverse

environmental effects carried forward for significant assessment. Residual effects are those remaining after mitigation.

In the bio-physical environment, we evaluated the significance of seven adverse effects; to name a few, the loss of approximately 40 hectares of near shore aquatic habitat as a result of lake infilling, impingement and entrainment losses resulting from the operation of a once-through cooling water system; the loss of nesting habitat for up to 1,000 bank swallows.

We also evaluated the significance of the five residual adverse effects identified in the social and human environment; for example, disruption to the use and enjoyment of property due to nuisance effects during construction; reduced use and enjoyment of on-site community and recreational features; and a change in the character of local communities as a result of cooling towers and their associated vapour plumes.

Five of the 12 residual effects listed on the last two slides are directly related to condenser cooling technology. Another three relate to lake infill which, as described by Mr. Sweetnam, can be reduced by the use of once-

through cooling technology.

Before describing OPG's conclusions on significance, I would like to further address the issue of condenser cooling specifically how we address alternatives.

An assessment of alternative cooling technologies was undertaken for OPG by MPR Associates of Alexandria, Virginia. MPR is recognized globally for its technical excellence in the energy and nuclear sectors.

MPR's 2009 report evaluated all of the cooling system options. They found all forms of wet-cooling towers and once-through cooling to be environmentally and technically acceptable. However, MPR expressed a clear preference for once-through cooling based on the site-specific conditions at the Darlington site.

OPG recognizes that the overall industry trend at the present time may be towards more use of cooling tower technologies but it is essential to focus on actual conditions at the Darlington site. Like MPR, OPG's preference is for once-through cooling.

We have reviewed the recent report prepared by the panel for the panel by Pacific

Northwest National Laboratories; we note that overall PNNL found OPG's data adequate to support an evaluation of trade-offs between condenser cooling options.

PNNL further notes that an analysis of cooling towers in less detail is acceptable when the impact of the proposed technology would not destabilize or noticeably alter any attribute of the environmental resource.

We understand that PNNL did not review a number of the reports that we provided to the panel particularly in the surface water area. PNNL's concerns in the surface water area, we believe, are addressed in those reports and in response to a number of information request.

A comparison of alternative cooling water technologies in an EA context is inherently a balancing exercise. Some of the factors to be balanced are capable of quantification; some are not.

PNNL recognizes that a qualitative evaluation is an acceptable approach. OPG believes that a quantitative analysis of cooling options at a later stage in the approval's process would not change the results of our work.

While PNNL may prefer a different method of qualitative evaluation, MPR advises that OPG's method of evaluation provides more information to a decision-maker as the same rating can be used for both environmental and economic aspects.

Returning to the residual effects assessment, if we implement once-through cooling together with a reduction in lake infill, we will eliminate four residual effects and reduce the impact of four others. Once-through cooling is the best available technology, economically achievable for the Darlington site.

We are committed to enhancing the design and operation of a once-through cooling system to address aquatic habitat and biota issues including more detailed thermal plume modeling to assist in optimizing the placement of the intake and discharge structures.

Please allow me to review the many benefits to once-through cooling for the Darlington new nuclear project. It has the lowest overall environmental impact; it respects the community views and concerns with the visual impacts of cooling towers; it facilitates the smallest project

footprint aiding to reduce noise and dust effects; and reduce truck traffic during site preparation.

It reduces lake infill to about 19 hectares; it significantly reduces the need to remove bank swallow habitat; it will not result in net withdrawals of water from Lake Ontario.

It is the most energy efficient option with the lowest overall cost to ratepayers. We note the PNNL agrees that the cost comparison performed by MPR was adequate.

Any assessment of cooling options is inherently qualitative. If we defer a decision on cooling technology to a later date, the conclusion will not change.

A total of 12 residual adverse effects of the project were identified and evaluated for significance. The number of residual adverse effects were small considering the scope and nature of the project because of the comprehensive scope of OPG's environmental management system and safety features incorporated into the design, plus additional mitigation measures identified through the EA.

Significance of the residual effect was determined through two separate

processes, a criteria-based assessment that considered the nature and the extent of the effect, and the second, the environmental and social implications of the effect and the independent, professional judgment of the practitioners who had identified each effect. In the course of our work, we confirmed that our significant assessment process was consistent with best practices and relevant precedents including recent EAs for nuclear facilities.

We also established appropriate criteria and parameters for a criteria-based determination that included all criteria described in the EIS guidelines and additional criteria considered relevant based on professional judgment, past practice and feedback during the public consultation.

No residual adverse effects were found to be significant using the criteria-based approach. All but one of the 12 residual effects were found to be not significant in the first stage of the criteria-based assessment due to the limited nature and extent of the effects. One residual effect, the effect of natural draft cooling towers and the plume from both the natural draft and

mechanical draft cooling towers was advanced to the second stage of the criteria-based assessment. It was not found to be significant because of the low rating of its environmental and social implications.

All of the residual adverse effects were confirmed to be not significant based on professional judgment assessment approach. As a result, we concluded that there were no residual adverse environmental effects associated with the Darlington New Nuclear Project.

OPG is fully prepared to meet the commitments in the EA, the licence application and any mitigation requirements established through the Joint Review Panel process. A listing of OPG's commitments has been provided to the Panel in response to the information request 54 and additional commitments have been made in response to the recommendations to the Joint Review Panel. Some of these are listed on the slide.

We consider commitments to be obligations that OPG has agreed to undertake and to ensure that the project will proceed in a manner that protects the natural environment; minimizes the effect of the project on the local public and

satisfies the requirement of the site preparation licence, other approving authorities and the CNSC including provisions for the maintenance of national security and measures required to implement international obligation to which Canada has agreed.

The commitments are documented in the EIS, in the subsequent additional studies that had been conducted and in OPG's responses to the information requests, the licence application, the proposed licence and licence condition handbook. These commitments will be managed and tracked to completion consistent with the project's management system.

The purpose of the EA follow-up program is to verify the accuracy of the EA and determine the effectiveness of mitigation measures. EA follow-up monitoring will be incorporated into OPG's comprehensive monitoring program for the project and will address the collective requirements for the project including licence conditions, a radiological environmental monitoring program, other required authorizations including those under the *Fisheries Act*, an environmental management system, environmental management and

protection plan monitoring.

EA follow-up will be a condition of the licence issued for each phase of the project. Actions required of subsequent licences will be progressively incorporated into the program. All work will be carried out as prescribed by licence condition handbooks.

Thank you, and I will now turn back to Albert Sweetnam who will conclude OPG's overview presentation.

MR. SWEETNAM: Thank you, Ms. Swami. For the record my name is Albert Sweetnam. OPG embraces sustainable development as an important aspect of its business. As a company, we define it as embracing business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting and enhancing the human and natural resources that would be needed in the future.

OPG's commitment to sustainable development is part of our overall environmental policy and it's reported upon annually in our sustainable development reports. The Darlington New Nuclear Project is a sustainable project in the context of the shared values OPG holds with the

community. OPG has long been a partner with the Durham Community. OPG has articulated a vision for the next 150 years in this EA. We foresee a healthy and productive future, one in which we continue to partner with the Durham Community in ongoing initiatives to enhance the community's environmental, educational and social well-being. As an example, we will invest in site servicing in the neighbouring Clarington Energy Park, which will in turn provide opportunities for additional employment, users to locate there.

Consistent with our approach to sustainability, I would like to outline some of the benefits of the project which did not factor into our conclusions about adverse environmental effects. First, the Darlington New Nuclear Project will provide up to 60 years of base load electricity for the province of Ontario. The project will provide significant direct and indirect induced employment opportunities as well as business and supplier opportunities. It will result in increased municipal revenues. There will be significant expenditures on good and services during the project construction.

It will contribute to increase

total household income in the Durham Community leading to increased household spending. It will enhance and build infrastructure. It will be a driver for increasing enrollment in specialized post-secondary education programs that provide energy or nuclear-related degrees or certificates and other training programs that support certification in skilled trades. The Darlington New Nuclear Project is one of the largest capital infrastructure projects in Canada. It will create significant benefits to this community for years to come.

In conclusion, the environmental assessment of the Darlington New Nuclear Project has been conducted as early as is practicable in the planning stages of the project and has been done before irrevocable decisions are made. The project has been considered in a careful and precautionary manner. The EA has considered the purpose and need for the project, the feasibility, alternative means of carrying out the project, the environmental effects of the project, the feasible alternative means, malfunctions and accidents and cumulative environmental effects, mitigation measures that are technically and economically

feasible, the significance of the residual adverse effects and the capacity of renewable resources that are likely to be significantly affected by the project to meet the needs of the present and those of the future.

There have been multiple opportunities for the public to participate in a timely and meaningful manner and public comments have influenced and directed our work. There are no significant public concerns that require further consideration or that cannot be addressed through this process. Community and Aboriginal traditional knowledge have been considered in the conduct of this EA. There are no effects on Aboriginal rights and we have a willing and supportive host community.

The bounding framework used in the EA conservatively predicts the environmental effects of the project. This conservatism is a result of OPG's commitment that any new technology to be deployed must satisfy the published regulatory expectations of the CNSC as well as the requirements of other regulatory agencies. OPG commits to review the final reactor design selected by the province to confirm that the EIS analysis

bounds the effects.

OPG and the relevant responsible authorities are well-placed and ensure the implementation of the identified mitigation measures and the appropriate follow-up program. There is no evidence that the project will cause any significant adverse environmental effects, taking into account the implementation of appropriate mitigation measures. And as I've already said, there are many direct benefits to the host communities and to the province of Ontario. As the executive vice-president and project manager for the Darlington New Nuclear Project and as the licencee I am accountable to the regulator and other share stakeholders for the execution of the project and for the fulfilment of all the commitments.

Our compliance with the commitments will be subject to ongoing regulatory oversight and the results will be made publicly available through the established routine reporting and regular CNSC meetings and hearings that occur respecting all nuclear plants in Canada.

OPG has demonstrated competence, successful management and oversight of large

projects. OPG will ensure provision for the safety of persons, the environment and security. We have demonstrated that we are fully qualified to undertake the licence activities.

Thank you for your time this evening and we welcome any questions that you might have.

CHAIRPERSON GRAHAM: Thank you very much, Mr. Sweetnam, and to your staff that have given us this presentation this evening.

Perhaps it might be an opportune time before we go into questions from panel members to take a short break, whether it's called health break or biological or whatever.

Perhaps I could suggest we take 10 minutes and be back here at 8:40.

--- Upon recessing at 8:28 p.m.

--- Upon resuming at 8:40 p.m.

CHAIRPERSON GRAHAM: Before we start, I just want to make one quick comment.

We'll start with a round of questions from the panel members and we may go to a second round. But we also want to allow some time for intervenors that may pose a question.

And it seems we haven't had

anybody register that might want to have a question and in the fairness of what I had said earlier, if you do have a question, Debra Myles is at the very back of the room. Debra, if you could just wave your hand, right at the door.

Anyone that wants to have a question after the panel members have their first round, please register with Debra.

So with that, I will start off with Madame Beaudet.

--- QUESTIONS BY THE PANEL:

MEMBER BEAUDET: Good evening everyone.

I have several questions in the PMD 1.1 that you submitted to us. But first I'd like to start with a clarification on your presentation.

On page 9, you mentioned that the once-through cooling water is the best available technology economically achievable to the Darlington site and you give what optimizes and the last bullet says: “provides maximum preservation of existing bank swallow habitat”.

What I'd like to check is now that you have accepted the proposal of DFO to limit the

lake infill to the two-metre depth contour, does it mean that you will also reduce the extent of the effect on the bluff? Are you reducing the length of the bluff that you're going to eliminate?

MR. SWEETNAM: Albert Sweetnam, for the record.

If we were to utilize once-through cooling, we have a layout that's not fully optimized at the moment. It would be optimized in the detail design process. However, once-through cooling will minimize the effects on the bluff.

If we utilize atmospheric cooling methods, then the bluff would be fully impacted. At this point in time, we cannot say -- without the full optimization of the site for once-through cooling, we cannot say how much of the bluff would be impacted in terms of once-through cooling. But it will be a minimal part of the bluff compared to the full bluff being impacted for atmospheric cooling.

MEMBER BEAUDET: My impression was that the removal of the bluff was to build the flood control measures. So I have some problems here trying to understand why you say that you would provide maximum preservation of the existing

bank swallow habitat.

MR. SWEETNAM: For cooling towers we need to fill about 40 hectares in the lake. That filling will impact the stability of the bank and as a result the bank swallow habitat which is right on the east side of our site.

With once-through cooling, we're able to minimize the fill in the lake and also minimize the footprint associated with cooling towers and as a result stay away from the bank.

At the moment, why we are hesitant about saying how much would be impacted, we're not sure about the stability of the bank. And until we do further studies on the stability of the bank, we will not know how much of it we will be able to save. But we will be able to save a significant part of it if we went to the once-through cooling.

MEMBER BEAUDET: I still don't have an answer. I'd like to, if it's possible for the staff to put -- we received January 28th, 2011 an updated aquatic environment compensation report from you and I'd like to have Figure 3 on the screen, please.

Now, if we look at this figure and we have here the imprints of the two-metre contour.

For me as I see it and that's why I'm asking you, am I wrong in understanding that the bluff disappears completely the whole length of the site?

MS. SWAMI: Laurie Swami, for the record.

The drawing that's shown on this particular sketch indicates what it would look like without optimizing the final contour of the infill area. So as we were estimating what it would look like, we provided a gross outline of the contour.

As we move into the actual application with DFO, we would anticipate that the contour that's finally selected would optimize that bank swallow habitat so that we could reduce the amount of bluff removal. So that while it's shown where there's a straight line on the drawing in front of you, it would be contoured to effectively mitigate the bank swallow habitat loss.

MEMBER BEAUDET: So there would be some bank, some bluff left.

MS. SWAMI: That is correct.

MEMBER BEAUDET: Okay.

We might as well go on with this figure because I have other clarification.

In the text in the PMD 1.1, you

have -- let's see now, on page 5, not the last paragraph but the one before, the last sentence:

> "The preferred once-through cooling water system can be implemented on site even if lake infill is limited to a depth of two metres."

And I think also in your answer to the DFO, the document you sent us where you have all the recommendations of the different federal departments and you say yes or no that you agree to go ahead with what they propose, and their recommendation. You say for this one that it would be only for cooling -- I mean, for once-through, but not cooling towers.

So for me I'd -- I'd like you to confirm that the cooling towers, you wouldn't have infill land; is that correct?

MR. SWEETNAM: What we confirm is that for -- with once-through cooling we can limit the lake infill to the two-metre contour. If we had to go to cooling towers we would have to have a larger infill in order to be able to fit all the facilities on the site.

MEMBER BEAUDET: Thank you. If we

look at this figure again, on -- on the east side, there's -- and I'd like you to explain to me what this drawing says. It seems that it's a proposed wetland. Is that exactly what it is?

MR. PETERS: John Peters, for the record. What you're looking at on the east end is an area that has been referred to as an embayment area that might be created depending on the amount of -- the length of the infill out into the lake. That embayment we were assessing for the potential to actually create the inshore habitat with some plantings of materials and other things that would actually increase the biological functionality of that portion of that embayment.

That was one of the things that we examined jointly with DFO in trying to understand the range of potential changes that would come, either positive or negative, as a result of infilling of various depths, and -- and contours. And this was -- this drawing is the -- as we've said, the initial layout of a two-metre infill. We've subsequently further suggested that we could live with this amount of infill for once-through lake water cooling only.

MEMBER BEAUDET: Would this

wetland replace what you had proposed in -- in the bigger area of 40 hectares of lake infill and -- and I think it would be interesting to take figure 3.4-2 of terrestrial effects because it -- it is a concept that you are proposing here, where you would have ponds for store management, but as well you recreate wetlands that you would lose because of dewatering.

So I'd like to see that this new area is -- is not really a wetland. I mean, it's -- it's still an embayment, it will not replace the wetland that you -- you would lose on sight because you as -- you have an new environmental impact assessment. You say that the vegetation is going to change, and because of the dewatering some areas that are considered wetlands would disappear.

So this would not be a mitigation -- a mitigation measure to replace what exists now and what is proposed on this figure. It's something else.

MR. PETERS: John Peters for the record. I'll speak about those three wetlands that are on the infill area that are illustrated. This was part of the terrestrial effects assessment where we had acknowledged the value of the near-

shore habitat for migratory birds and other species, and we acknowledged that after the site prep and construction phase of the project was completed, there may be opportunities to naturalize portions of that near-shore areas for natural uses by species such as ducks migrating, other shore birds, and waterfowl.

And so we had identified the potential for creating splash ponds or -- or wetter areas on the shoreline which -- which would amend and create opportunities that we currently don't have on the shoreline of Lake Ontario at the moment, although we know that it is -- it is widely used, the embayment area between ourselves and St. Mary's is a -- is a wellknown staging area for -- for migratory waterfowl.

So that was identified -- we had identified the east-west corridor along the waterfront as a -- an important wildlife corridor, particularly for fish and then also for migratory species. And so these were options that were identified very early in the planning process to create habitat consistent with OPG's vowed diversity policy, and it would, to some extent, offset some of the losses that we'd identified

immediately to the north in the area that was proposed to be fully excavated by the terrestrial assessment, which -- which again looked at a bounding framework.

I also want to point out that there was a wetland identified in the far northeast corner of the property, which was also created as an area of recharge and an opportunity because of a similar valued wetland habitat that was created on the west with our first soil stockpile. We would be able to do the same thing in the northeast and create a very valuable wetland in and adjacent to the Darlington Creek area in our property. So that is also identified as an opportunity here as well.

MEMBER BEAUDET: But the one at the bottom of the figure there, if you have the two-metre contour there's no space to have this mitigation measure, you would have to compensate for the no net-loss somewhere else.

MR. PETERS: John Peters for the record. I need to be clear with you, we're not -- this was a terrestrial benefit that we were examining, and we've identified other opportunities on the -- on the site to do the terrestrial habitat improvements.

When you get to a no net-loss we're specifically referring to aquatic habitat, and these do not pertain to that at all. We've identified -- we started out with seven to nine -- nine projects and then whittled them down through a -- a process with a number of interested agency participants to three, which we are now studying in detail. And -- and the slide previously illustrated the nature of the work we've done with DFO to characterize in detail three projects that would be a substantive contribution to the no net-loss, and particularly successful with a two-metre infilling only. This illustrates, as you correctly suggest, a 40-hectare infill, much larger.

MEMBER BEAUDET: And this has nothing to do with the embayment wetland you would create that we saw in a previous dig?

MR. PETERS: That's correct. This is a terrestrial analysis only, and the other one was only related to aquatic effects.

MEMBER BEAUDET: Thank you.

CHAIRPERSON GRAHAM: Thank you, Madam Beaudet and Mr. Pereira.

MEMBER PEREIRA: I'll switch subjects and talk a little bit. Ask a couple of

questions about accidents and malfunctions -- malfunctions and accidents.

In Section 1.4 of your PMD 1.1A you state that even for events at the limit of credibility, substantial offsite releases of radioactivity are not expected. Now, I know you touched on this in your presentation, but you touched on it fairly quickly and you were covering a lot of material. Could you explain in layman's terms why substantial releases would not be expected outside in the event of such accidents? What are the protective measures and plant design features that you consider would assure of such an outcome?

MR. SWEETNAM: Albert Sweetnam for the record. I'll ask Dr. Vecchiarelli to address this question.

MR. VECCHIARELLI: For the record, Jack Vecchiarelli. I am the section manager of safety analysis for the Darlington New Nuclear Project. I believe your question was, why is it that we believe there are no substantial offsite releases within the range of credible accidents. The reason for this is that the available vendor safety analysis information indicates that the core

damage frequency of the various designs, that is the likelihood of having a substantial release which can accompany a core damage scenario, is much lower than one in one million years, which is the limit of credibility as defined in the EIS guidelines.

MEMBER PEREIRA: Thank you for that, but I wanted you to go a bit further than that, and in particular, what are the plant design features and protective measures in place? In a sense, you know, what is there in the plant beyond that no probability of -- of failure to assure that these sort of events do not progress?

MR. VECCHIARELLI: For the record, Jack Vecchiarelli. The types of features that are typical -- of the various designs considered include redundancy in each of the special safety systems so to ensure that –- that even in the event of a single failure of a key component, there are other components which can carry out the safety-related functions. And there’s a whole layer of defence in depth built into the designs, including incorporation of passive safety features, provision of alternate sources of water as a backup to emergency core cooling systems, passive hydrogen

recombiners to limit the concentration of hydrogen that might be released in a severe accident scenario. So all of these –- these are some examples of measures that are in place to ensure that we do not get large offsite releases within the realm of credibility.

MEMBER PEREIRA: Thank you. You used a word “passive” a couple of times. What exactly do you mean by that in terms of what is different from what we have now?

MR. VECCHIARELLI: Jack Vecchiarelli, for the record.

A passive system is one which typically does not require operator action or electrical power, AC power. Active systems will require –- for example, typically will be something like a pump. A passive system, and there are different degrees of passivity could involve natural convection of a fluid that is initiated naturally by –- by gravity-driven forces, et cetera.

MEMBER PEREIRA: And are there any other protective systems that you would –- could discuss for us that protect against releases from the –- from the plant?

MR. VECCHIARELLI: Jack Vecchiarelli, for the record.

Just a moment. I will –- so, for instance, in case of the enhanced CANDU 6, there is gravity injection to the primary heat transport system following a loss of coolant accident. As a backup to the emergency –- emergency core cooling system failure, there's a gravity-fed water supply to the containment providing a spray. In the event of a severe accident, that helps to reduce containment pressure. There's a gravity injection of –- to the steam generators, which is a secondary side cooling system, and in the event that the active system which normally supplies that in the event of an emergency, in case that fails, there's make-up water to the calandria in the calandria vault provided by this overhead reserve water tank. In the case of the enhanced CANDU 6, that, in the case of a severe accident, can be –- supply water to these –- these safety features. These are just a subset of passive features.

MEMBER PEREIRA: And have these design features been installed in current generation reactors that are they tested, are they proven to work?

MR. VECCHIARELLI: Jack Vecchiarelli, for the record.

For example, passive hydrogen recombiners have been installed in some European PWRs in Finland, and they've been tested. In fact, they've been tested in for the CANDU designs as well, and there are plans to install passive recombiners, for instance, in the existing –- some of the existing designs in Canada.

MEMBER PEREIRA: Thank you for that level of detail. I'll switch now to accidents again but another aspect. PMD P1.1A, Section 1.4 states that the accident analysis took modern design and operation –- current operational guidelines and proven emergency management plans into account to ensure that the assessment represents the likely effects of an accident or malfunction involving a new nuclear power plant. What is the basis for the claim that the emergency management plans you have put in your EIS are proven? Has the experience in actual emergencies been applied to validate these plans when you claim they're proven?

MS. SWAMI: Laurie Swami, for the record.

We have an established emergency planning infrastructure in Ontario that encompasses all of our nuclear facilities today. The plan is based on many years of experience with other events that take place worldwide. I believe earlier this morning Katrina was mentioned as one of those types of events where we're taking learnings and apply it to our emergency prepared –- preparedness program.

We also have an extensive training and testing program associated with it. We execute tests –- or events, simulated events at our facilities to test the emergency response program so that we understand the implementation and all of the issues surrounding implementation and that we make improvements as identified through that –- that protocol.

In our environmental assessment, we also undertook evacuation time estimate studies, which took into consideration standards that are used in the US to develop evacuation times. The studied protocol is established. We used that to evaluate the infrastructure around the Darlington site and established that the evacuation would take place in a fairly short order, within 9 hours out to 20, 25, and that we would be establishing

effective evacuation of the ten-kilometre zone.

MEMBER PEREIRA: And that's good. There's a lot of aspects there that I can see you've exercised and tested, but how would you –- how can you claim validation if that's for really large numbers of people in the vicinity of Darlington, say, in the middle of winter. Is that –- you have –- would you base your validation for those sort of conditions for moving large numbers of people, not the procedures at the front end, but actually moving people out of the –- out of the hazard zone?

MS. SWAMI: Laurie Swami, for the record.

The evacuation time estimate studies took in to consider a range of conditions, including severe weather and the –- the local environment, a potential for traffic accidents, so looked at worst case weather, time of day, those types of factors were included in the model that was prepared and used in the environmental assessment. So we feel that we have done a very thorough job of assessing all of the range of transportation conditions that could exist in the Darlington area given the current transportation

network, as well as projecting into the future with population growth and the potential as population grows around the Darlington area that we would still be able to evacuate the ten-kilometre zone in a reasonable period of time.

MR. PEREIRA: Thank you. Mr. Chairman, next round.

CHAIRPERSON GRAHAM: Thank you. I understand from the questions, and there was considerable discussion at the end of your presentation with regard to economic benefits to the community, and there's been a lot said about that. Has there been any analysis of economic benefits with regard to social or training and so on to the Aboriginal people in the area?

MR. SWEETNAM: Albert Sweetnam, for the record.

I'll ask Donna Pawlowski to respond to this question.

MS. PAWLOWSKI: Donna Pawlowski, for the record.

I'm the manager of the social aspects portion of the environmental assessment, including responsibility for the Aboriginal Interests Program. Your question, I believe, was,

have we given consideration to employment and economic benefits to the Aboriginal communities as a consequence of this project, and, yes, the answer is yes.

First, I must say that OPG does have an Aboriginal workforce currently that is reflective of the Aboriginal population in Ontario, and secondly, we have an employment equity and diversity program within Ontario Power Generation to encourage and increase our employment of Aboriginal peoples. We focus that program largely on encouraging Aboriginal youth to stay in school and to take the appropriate programs and training to enable them to participate in the nuclear program and the nuclear operations side of the house.

That said, we also have an Aboriginal Relations Policy that encourages employment and business opportunities –- exploring employment and business opportunities for Aboriginal communities who are proximate to our current and future operations. So within that framework, we have had discussions with the local First Nation communities about how they can engage themselves in the program, what type of training is

available, what type of education is available.

CHAIRPERSON GRAHAM: And that will include Mètis also?

MS. PAWLOWSKI: That includes Mètis communities proximate to our site as well.

CHAIRPERSON GRAHAM: Thank you for that answer. Before I get to the Panel members, I have indication that there are three interveners that would like to pose questions.

The first one is Theresa McClenaghan of CELA.

Theresa or Ms. McClenaghan -- I'm sorry.

--- QUESTIONS FROM INTERVENERS:

MS. McCLENAGHAN: That's fine, Mr. Chairman.

My questions all pertain to accidents and malfunctions and I'm wondering, Mr. Chairman, first of all, if there's another -- if there's a plan for another time when information about accidents and malfunctions will be before the hearing other than this evening. Is there a more detailed presentation?

CHAIRPERSON GRAHAM: It was the intention to make it one question each from

intervenors. And yes, there will be opportunity. OPG will be before us at least on four different subjects and the next one is -- yes, there's Health Canada when they're here. Also Emergency Management; that's on Friday. Health Canada is on Thursday -- Thursday afternoon. So there will be other opportunities.

So if you can have one -- pose one question tonight in the fairness of time and then we'll go to the other intervenors.

MS. McCLENAGHAN: All right. Thank you, Mr. Chairman.

I would indicate that this is an extremely important topic for the panel so I would request that you exercise your discretion to make additional time for this topic.

In particular, for this evening, it's my understanding, Mr. Chairman, and I wonder if you could ask OPG to confirm that the accidents and malfunctions they've examined are those that they consider -- they use the term "credible" tonight. We've used the term and they've used the term within the design basis and -- to confirm whether or not they've assessed accidents in which radioactivity might be released off site and if so

where that was evaluated in the environmental impact statement?

CHAIRPERSON GRAHAM: Thank you.

Okay to OPG; there really is two parts to that question so I wonder if you would respond please?

MR. SWEETNAM: Albert Sweetnam, for the record.

I'll ask Dr. Jack Vecchiarelli to respond.

MR. VECCHIARELLI: Jack Vecchiarelli, for the record.

I believe one of the questions was where have we considered a scenario where there's off site releases, and that is part of the accidents and malfunctions technical support document where basically what we did was we derived a hypothetical, radiological release to the environment, one which would bound any credible release from a plant that could be licensed in Canada, and we proceeded to predict what the doses would be from beyond the plant boundaries to determine to what extent temporary evacuation and long-term relocation might be necessary.

So that study is detailed in the

accidents and malfunctions technical support document.

I didn't quite get the first question.

MS. McCLENAGHAN: The first question was whether accidents beyond design basis were evaluated.

MR. VECCHIARELLI: Jack Vecchiarelli, for the record.

The answer is yes, these credible -- the bounding accident scenario that I just mentioned is one which would bound events that could occur within one in one million years of operation.

According to CNSC regulatory document RD-310 that would be considered a beyond design basis accident. Design basis accidents are those that are classified with a frequency of between one in one hundred years and one in one hundred thousand years.

CHAIRPERSON GRAHAM: Okay, thank you very much.

The next intervenor who would like to pose questions, Mr. Mark Mattson of Lake Ontario Waterkeepers.

Mr. Mattson.

MR. MATTSON: Thank you, Mr. Chairman.

Mr. Sweetnam, could we put up the once-through cooling slide?

CHAIRPERSON GRAHAM: Our staff, I think, can do that.

MR. MATTSON: Oh, sorry. Thank you.

It was tough, by the way, figuring out how to ask one question.

CHAIRPERSON GRAHAM: I'm sure you'll have the opportunity to ask many more.

MR. MATTSON: There we go. Thank you.

Mr. Sweetnam, as you know, our two experts, Doug Howell, a biologist and former District Manager for OMNR and Dr. Henderson, an ecological expert from Oxford, both conclude that the once-through cooling water technology has the most negative impacts on Lake Ontario because it kills 23 million eggs and two million larvae in entrainment. It kills 23,000 to 46,000 fish in impingement. It has serious thermal impacts on fish habitat and it has unnecessary loadings of

biocides and other additives into the lake.

What expert evidence are you providing the panel with to support your opinion and analysis that once-through cooling has the lowest environmental impact?

CHAIRPERSON GRAHAM: Mr. Mattson, if you'd address it to the Chair.

MR. MATTSON: Sorry, Mr. Chairman.

CHAIRPERSON GRAHAM: It's quite all right. We'll look for the answer now.

MR. MATTSON: I'm too used to court proceedings you see, looking at the witness.

MS. SWAMI: Laurie Swami, for the record.

I'm going to ask John Peters to further elaborate on the fish impingement and entrainment numbers that you've quoted.

I just wanted to clarify. Mr. Mattson mentioned that there was a biocide added to once-through cooling water. I'm not quite familiar with what he is referring to and I wonder if I could just have clarification as we prepare our answer to this question.

MR. MATTSON: Yes, well, what I'm looking for, Mr. Chairman, is the expert evidence

that OPG is relying on to counter the evidence that they know and have in their possession that they're providing which includes about biocides. They'll have an opportunity to cross-examine Dr. Henderson when that comes.

I want to know what expert evidence they are bringing to this panel in order to make this statement that it has the lowest environmental impact.

Thank you.

MS. SWAMI: Laurie Swami, for the record.

The lowest environmental impact that we're considering in this case is all of the environmental impacts which include not only impacts of the lake, but also consider the community views as mentioned; also considers the footprint of the plant, the amount of material that would be required to be excavated at the site, the potential to minimize the infill area to the two metre depth; all of those factors when we say lowest environmental impact consider all things, not just one thing.

Further to the question that was specifically asked, we have provided a number of

studies on the aquatic effects from once-through cooling water. Many of those have been filed to the Joint Review Panel and are included in our technical support document on aquatic effects.

A number of references are provided. Many of those references were requested by the panel which we have subsequently submitted and are available. We do rely on expert advice as well and have contacted a number of U.S. experts as well as those that work for SENES and for Golder as consulting team members.

We have filed in particular a biological liability losses report. It's JRP Document Number 228 which provides a further assessment of the biological effects as well as the cost associated with those effects.

We believe that we have provided a significant amount of information with respect to the once-through cooling water system which is available and is on the record.

MR. MATTSON: Mr. Chairman, the question was that the lowest environmental impact is on the slide. We've gone through that evidence and so have our experts and there's been no mention whatsoever in your evidence that once-through

cooling has the lowest environmental impact. And all I want to know is what expertise are you providing to support that statement that you put forward for the public tonight? If you can find it, that'd be great.

CHAIRPERSON GRAHAM: Mr. Mattson?

MR. MATTSON: Sorry, Mr. Chairman.

CHAIRPERSON GRAHAM: We'll look for an answer on this point and then we'll go to the next intervenor.

MS. SWAMI: Laurie Swami, for the record.

I would reference IR-11 resubmission which did a comparison of all of the cooling technologies which is available.

Our aquatic compensation report also provided more information.

I could go through the entire list of documents submitted but I think in the interest of time, it would be best to leave it at that.

CHAIRPERSON GRAHAM: Thank you.

Ms. Lloyd from Northwatch, you're next.

MS. LLOYD: Thank you. Brennain Lloyd from Northwatch.

My question, Mr. Chair, is with respect to how the presentations made this evening by Ontario Power Generation, particularly Slide 17 where they referenced the flexible bounding framework and their slides on malfunction and accidents; if they could reflect on them in light of the ongoing events at Fukushima Daiichi, or alternatively, if you could direct them to address those in their presentation at a later date.

I mean, I appreciate you have said that the panel has asked for a broad factual presentation. I think that these issues are central to that discussion. And at your direction, I will ask my question or accept that these are going to be addressed in their presentation to come.

But I would -- if I could just add to Ms. McClenaghan's request that we have a later presentation by OPG specifically on malfunction and accidents. There are a number of issues they are addressing with specific presentations, malfunctions and accidents are not on that list.

So, whether it's going to be given a thorough examination in the presentation -- evaluation evidence at Daiichi or in a separate

presentation or both.

CHAIRPERSON GRAHAM: First of all I wish to assure you that the subject will be addressed during the course of the hearings. But perhaps OPG may want to just comment with regard to what -- when you see some of these concerns being brought up and I think -- as I said it before, it's a lot and under which subjects so that Northwatch can prepare for questions regarding that?

MS. SWAMI: Laurie Swami, for the record.

We had planned to have detailed discussions with the panel on the malfunctions and accidents that we've considered as part of the health presentation material. It may not be specifically on our slides but certainly including it in our presentation material and speaking with the panel we can, if the panel so directs, provide more information after we go through that session as I'm sure there will be time later in the hearings at the discretion of the panel of course.

CHAIRPERSON GRAHAM: I guess you've heard what Northwatch -- some of Northwatch's concern. The health subjects will be up on Human Health and Safety are going to be on

the agenda Thursday afternoon.

So we'll count on you to have your questions and perhaps it can be more thoroughly addressed at that time. Is that satisfactory to you?

MS. LLOYD: Thank you, Mr. Chair.

CHAIRPERSON GRAHAM: Thank you very much.

And we have one more intervenor that has indicated that he would like to speak and it's Mr. Kalvera. Mr. Kalvera has indicated one question for the Chair as other intervenors have done tonight. Thank you.

MR. KALVERA: It's a pleasure to go to you, I wouldn't go through anybody else.

I'm an engineer, electrical engineer, at one time I worked for Atomic Energy. I may have -- I just have the answer as to what are you going to do with nuclear waste? And I am now an intervenor.

My question to you is I would just -- beyond design basis, from I think Mr. Vecchiarelli or something, and he said it is within 1 in a 100 years and 1 in 100,000 years or something. I would like him to firstly explain

that a little bit.

And secondly what is the design versus that OPG's operating one?

I would like that clearly explained, if not tonight maybe in future, some submission from OPG regards -- it seems like it takes an engineer to understand an engineer and they're trying this beyond design basis and nobody's challenging that. At least I have not heard anybody challenging that.

So I would really like that to be really fully expanded so I know as an engineer what the design basis is.

So if somebody can?

CHAIRPERSON GRAHAM: Thank you very much.

OPG, would you like to first explain a little further the concept of the 100 years versus the 10,000 years and so on. And then the second part of that question, if you would try to enunciate it, if not, when would you be able to do that?

MR. SWEETNAM: Albert Sweetnam, for the record.

I'd ask Jack Vecchiarelli to

respond to the question.

MR. VECCHIARELLI: Jack Vecchiarelli, for the record.

So let’s begin first by understanding what is an accident. An accident is an unintended event with potential consequences that are not negligible from the point of view of safety.

A design basis accident is one which is an accident which is expected -- is very unlikely to occur, however, is designed for.

And all of the design requirements for a wide range of postulated accidents are taken into account beyond -- the whole basis of the 1 in 100 to 1 in 100,000 years, that’s based on a concept that what you want are events that are more likely to occur, to have minimal consequences and events that have more significant consequences to be a very low probability.

And the way that the regulatory documents RD-337 from the CNSC captures this, is to set those acceptance limits on design basis accidents. And then that in turn sets design requirements through safety analysis and design on special safety systems such as the emergency core

cooling system, the containment system, the shutdown systems, et cetera. So it's a category of events which are fully designed for. And that is considered a design basis.

The design basis, part of the other question was what is the design basis for the Darlington new nuclear plant?

That activity in detail is developed in the subsequent licensing stages and the construction licensing stage, the input to that comes from the work that was conducted under the licence to prepare site.

There's a lot of input to the design process looking at various natural and external hazards. That is all carried forward as inputs to the detail design in the next licensing stage.

CHAIRPERSON GRAHAM: Thank you.

Since RD-310 is the product of CNSC and it's been raised, I wonder if CNSC might -- staff may want to make a comment with regard to RD-310 and how this equates to the question asked by Mr. Kalvera.

MR. HOWDEN: Barclay Howden speaking, for the record.

The actual document we'd like to talk about is RD-337 which is design requirements for new nuclear power plants and they actually speak to the safety goals that we've described in that.

I'm going to ask Dr. Dave Newan to speak to that.

DR. NEWAN: For the record, Dave Newan.

Within RD-337, we have characterized accidents from what we refer to as anticipated operational occurrences. Occurrences that you might expect to see once in a lifetime of a plant where you need to take some kind of action.

So those are accidents typically in the range of -- that may occur once a year to once in a 100 years.

We then have a category of accidents that we called -- call design basis accidents. And as explained by OPG, there are rules within RD337 that requires that those designs have specific provisions for dealing with those kinds of accidents. The frequency range is from one in one hundred years to one in one hundred thousand years.

In addition to that, we recognize that severe accidents do happen and can happen, and the -- the terminology that we have used for those very low probability events is beyond the design basis accidents. And I want to explain just a little bit about why they're called beyond the design basis. That's a terminology that was -- it came from the seventies when people didn't look at severe accidents, and so those events were considered beyond the design. They weren't thought of at that time.

The world has moved on and we now recognize that severe accidents do occur, and so the international community and regulatory community, and the CNSC in particular, now has specific design provisions for those types of accidents, for those severe accidents. So things that have been already mentioned are, for example, mitigation against hydrogen, more robust containments, and other various features.

So the intent is that we have a set of design requirements that cover a very wide range of accidents and frequencies.

CHAIRPERSON GRAHAM: Thank you very much.

That concludes the -- the intervenor's questions. We'll now go to round two from our Panel.

Thank you, Mr. Kalvera, for your question. And, Madame Beaudet?

MR. KALVERA: It's -- it's Kalvera, if you can get it right.

CHAIRPERSON GRAHAM: I -- I appologize, Kalvera.

MR. KALVERA: Yes.

CHAIRPERSON GRAHAM: Well, thank you very much.

MR. KALVERA: The closest thing you can make a mistake is call me clever.

CHAIRPERSON GRAHAM: I'm sure you'll be before us again, so I'll try and do better.

Madame Beaudet, your questions please?

--- QUESTIONS BY THE PANEL:

MEMBER BEAUDET: Thank you, Mr. Chairman.

I'd like to look at a few things regarding sustainable development. I know OPG has made a lot of efforts and for instance by all this

biodiversity protection and with reason I think you are proud of the achievement and the awards that you have received, and I also know that you've been preparing sustainable development reports for probably ten years now, if not more. For us it's also important to look into this aspect of -- of the claim of OPG because it reflects also the seriousness you will take with the mitigation measures.

I've looked at the 2009 sustainable development report of OPG. It's the last one that's on your site. You don't seem to have 2010 yet. And on page 5 it's just saying that you do not -- you do not anymore use the global reporting initiative, the guidelines, because you have a high level conclusion by the Canadian Business for Social Responsibility.

I'd like to hear more about that, why you have abandoned or have you ever used the GRI guidelines, and I believe Canadian Business for Social Responsibility does auditing as well. A lot of companies use STRATOS or STRATOS Guide. They're also doing auditing, so I'd like to have you comment somewhat, have you ever used GRI, why you're not using them anymore. Is the Canadian

Business for Social Responsibility your auditor?

MR. SWEETNAM: Albert Sweetnam for the record.

We -- we don't have the appropriate person here this evening to address your question. Could we take an undertaking to get back to you?

MEMBER BEAUDET: Yes. And I would have another question also for that person. I have looked at the reporting in Canada, evaluation made by STRATOS, December 2005, and OPG within the first 30 companies you've rated number 27. In the first sustainable reporting I think you were more active, and you may correct me on that, but you were also a sponsor for different activities, and I think you were considered among the first four. And I would like to understand why the rating has gone down.

That's my first line of questioning. My second one, we'll go back to social-economic aspect. I have one question on that regarding the benefits for the community with the project. The different figures that were put in front of us by different groups in -- in the PMVs, and I think the EIs and the technical support document also has brought figures between 3,500

people to 5,000 people, depending if there's two units or four units or which period, whether it was just during construction or when two units are operated and they're doing the construction of the two mix units. And the assumption is that all these jobs will come -- will be taken by the region.

I'd like to know in the bidding process, obviously some of the contracts would have to be done by major companies that are recognized by -- by you, are listed by you as being able to do the job. Is there any provision that the companies would first look at local employment? Do you have any provision in your bidding process or rules that you will insist that whatever company you will take will not employ people, let's say, from Toronto or even from other provinces. How does it work?

MR. SWEETNAM: It's -- the numbers that we quote at the moment are basically up to 3,500 workers at peak at site, with 35 percent of that workforce being drawn from the regional area based on Statistics Canada's skilled labour distribution at the moment.

We don't have a specific requirement in the tendering documents to source

labour from the regional area, however it happens automatically because if a contractor has to bring labour in from outside of the region, they will have to pay transportation and/or accommodation, which would increase their costs and make them less competitive. So the competitive process actually drives the contractors. The first utilize all of the labour available in the region before looking outside of the region.

MEMBER BEAUDET: The reason that I thought of that was that when we were looking at the impact on Darlington Park and you do mention that maybe they will be 14 percent decrease from the local population was in the park, but because there would be so many workers during site preparation, for instance, from outside, it wouldn't be an impact, then you don't need any mitigating measures because you have a lot of people coming from outside.

So there's a bit of confusion here. Either it's the local population or it's people from outside.

MR. SWEETNAM: As part of the -- the 35 hundred site force, in addition to that, we have about 300 persons that would be working in the

project team. And they would be utilizing the facilities that are in the area as well. And that would -- that would accommodate the reduction that we expect.

MEMBER BEAUDET: So if I understand well, I don't put into question the numbers. I think you've evaluated that.

But what I can’t understand is you haven’t evaluated the local population, the percentage of the local population of this let's say 3,500 workers. Have you for sure?

Because people have the impression that Durham is going to be fully employed. And it has to be clear if this is an illusion or a wish.

MR. SWEETNAM: Albert Sweetnam, for the record.

As I've indicated before, maybe I wasn’t as clear as I should have been, the anticipation is out of the 3,500 workers; 35 percent of that workforce will come from the Durham Region.

MEMBER BEAUDET: Thank you.

CHAIRPERSON GRAHAM: Just for the record, you gave Mr. Sweetnam an undertaking and I'd like to be able to deal with undertakings at

the beginning of each day's session.

Could you indicate what day you were going to give the answers and have the necessary and the proper person here to answer questions from Madame Beaudet so that we can have it in here because I'm sure there will be more of these as the week goes on?

MR. SWEETNAM: Albert Sweetnam, for the record.

If you could allow us to have until Wednesday morning; we would do that.

CHAIRPERSON GRAHAM: Thank you. That will be I guess, to track this properly, and this will be Undertaking Number 1 and it will be put on the agenda for Wednesday morning.

CHAIRPERSON GRAHAM: Mr. Pereira?

MEMBER PEREIRA: Thank you, Mr. Chairman.

I'll stay on somewhat related issues, performance and management systems. You referred in your presentation, Mr. Sweetnam, in passing that commitment to application for management system developed in accordance with I presume the CNSC standard 286.5. And then as you went on in the presentation, you talked about

safety culture.

Now, as you know, when we look at the performance at nuclear generating stations not only in Canada but in other countries as well, a dominant factor of significant events and minor accidents is human performance.

So I'd like you to describe in fairly high levelled detail how you propose to implement a safety culture at your new generating station.

MR. SWEETNAM: Albert Sweetnam, for the record.

Initially during the licence to prepare the site, the safety culture will be focussed around construction activities in particular. A safety culture is through regular job briefings, walk around on the jobs with the contractors, training of all of the contractor staff in safety culture before they come on site, regular inspections, requirement for each person to be responsible for the other, the ability for foremen to be able to stop work, the ability for escalations, regular job briefings associated with each activity and regular safety meetings on a regular basis, as well as at every meeting we have

as well a safety moment.

So safety is always the first thing we speak about at every meeting in addition to all of the other things I have just mentioned.

MEMBER PEREIRA: Thank you.

So is this part of your management system or is it a separate activity?

MR. SWEETNAM: Safety is embodied in the entire management system and in all aspects of the management system. However, there is a specific safety procedure that -- for the project that will be utilized for both ourselves and for the EPC contractor.

MEMBER PEREIRA: Just to understand a bit more about the management system, in Section 2 of PMD 1.1, one of the attributes that you hope to instil in implementing a management system is the control of changes.

Could you outline how changes would be controlled in the implementation of mitigation measures that are to be committed to for your Environmental Assessment Program?

MR. SWEETNAM: Could you rephrase the question, please?

MEMBER PEREIRA: One the

attributes that is described in your PMD of a management system is one of the things that you would commit to is the control of changes. This is a classical activity in a management system.

So my question is how, as you implement the mitigation measures that you commit to as part of your Environmental Assessment Program, it comes out of this EA, how would OPG control changes to the mitigation measures?

So in other words, as the program is being implemented and the operators decide or the contractors decide they want to do it slightly differently, how would that be controlled from OPG's management system oversight program?

MR. SWEETNAM: Albert Sweetnam, for the record.

First of all, the changes -- sorry, not the changes but the mitigation that would be included in the licence and in the EA would be tracked on a regular basis. Any changes to that mitigation proposed by a contractor would first have to be -- they would have to propose the change, reason for the change, costs for the change. We would then review that.

We would have a change group to

review that. And then we would then consult with the agency that that mitigation directly impacts to get agreement with that agency first that the change was acceptable, explaining to them the reason for the change.

After we had agreement with the agency, we would then implement the change with the contractor after we had determined that we had best value for money.

MEMBER PEREIRA: And if this is then a change that impacts on the environmental effects that you're trying to protect against, I presume then there would be some way of going back into the program to see how other compensating measures could be implemented. Is that what you would do?

MR. SWEETNAM: That’s correct. If the change actually created an additional environmental impact that had not been mitigated for and we agreed with the contractor that this was a reasonable approach. And then we had gone to the agency or the regulator and they had agreed as well that this change should be made. We would then have a balancing mitigation measure to deal with the additional effect of that change.

MEMBER PEREIRA: Mr. Chairman, could I redirect to the CNSC?

Do you have any comment on change control in this particular context?

MS. THOMPSON: Patsy Thompson, for the record.

Under the *Canadian Environmental Assessment Act*, the responsibility for ensuring that mitigating measures and follow-up program is implemented rests with the responsible authority.

In the case of the CNSC, it rests with the Commission and so the expectation is that through our licensing and compliance process that mitigation measures would be identified, that the designs would be reviewed and accepted by CNSC staff or the Commission depending on the items.

And there would be conditions on the OPG's licence to implement the mitigation measures and the CNSC would use its compliance program for tracking.

But in all cases, the expectation is that the level of environmental effects identified through the EA as being not likely to be significant. It would need to be complied with.

CHAIRPERSON GRAHAM: Thank you

very much, Dr. Thompson.

A follow-up question just to my colleague, Madame Beaudet's regarding the 35 percent objective.

My understanding was, in reading some of the documents, that this -- if everything is approved and everything goes as scheduled, this plant will be coming along about the same time as Pickering B was being decommissioned.

And I thought there was an understanding that a lot of those people from Pickering B would be coming to the new Darlington plant. Is that still more or less the plan and does that -- would that reflect or -- or -- yes, reflect on the 35 percent objective that you gave earlier?

MR. SWEETNAM: Albert Sweetnam, for the record.

The present anticipated time for the plant to come on line is between 2020 and 2022. We stated clearly that Pickering would be coming down in 2020.

If the project proceeds and these two dates match, then the obvious source of employment would be from the Pickering plant. We

would try to minimize job loss as much as possible. There will be some cross-training required for the staff, but that would be part of the 35 percent if the two dates were to match.

CHAIRPERSON GRAHAM: So you're talking really about the same people, if they're at Pickering or if they're at Darlington, they're still Durham region people; is that what you're saying?

MR. SWEETNAM: That's correct.

CHAIRPERSON GRAHAM: Thank you.

Madame Beaudet, do you have any other questions? Because I think we'll try and go to about 10:00 so if you have any other questions?

MEMBER BEAUDET: Thank you, Mr. Chairman.

I think we'll go further during the week in more details when we have the municipalities with us, but I'd like to touch base tonight on this aspect of traffic and transportation.

And there -- there was an evaluation by CNSC that the Waverly exit eastbound could become dangerous because of the backlog. And it didn't seem to be reflected, this aspect, in the

technical support document, only the environmental impact assessment.

So I'd like to have your comments on that? And if you can't tonight, that's why I'm bringing it up now so that you can prepare for it.

MR. SWEETNAM: Albert Sweetnam, for the record.

I'll ask Jim Gough to answer this question.

MR. GOUGH: For the record, Jim Gough.

I'm the transportation lead on the project. In the TSD, we actually did analyze the potential cueing effects of traffic, both related to the project and unrelated to the project as it was expected to grow over the life of the project on each of the interchanges including the Waverly Road movement. And the values that we project really are quite well within the capacity of that ramp system.

MEMBER BEAUDET: I'll correct myself here. I know you've talked about this it appears on different pages.

What -- it seems, yes, that you say it's within the capacity of the system, but

when you go on site and you look at the exit, you can see that probably 2031, let's say, there would be a problem. And I was wondering if you considered that there should be some -- what do you call it -- "réaménagement" of that exit?

MR. GOUGH: For the record, Jim Gough.

Yes, our analysis does recommend mitigation at that -- at that entire interchange. We certainly do recognize that it is quite a constrained location given the proximity of the south service road to the highway, and also the proximity of Waverly Road and also the railway comes into it as well.

So we have recommended mitigation at 2021 to accommodate the growth in demand. Most of which I would note on that movement that you're speaking of, is actually not related at all to the project. It's entirely unrelated.

But we have nonetheless recommended mitigation which includes signalization and in the TSD, we also do speak to the issue that MTO, the Ministry of Transportation, is understood to be planning a feasibility study for improvements throughout that corridor which will look at that

interchange as well.

So we do try to anticipate that the interchange will evolve over the project life.

MEMBER BEAUDET: Which brings the next question. We saw a slide tonight that demonstrates that there's very little effect over the years in terms of growth of population relative to this project.

I mean, it's -- it's the normal evolvement of the region, however, you do take pride in saying that you are a catalyst in moving forward in the region from an economic standpoint.

And here, on page 13, we seem to still be covering what are the needs and what is going to be done? And yet, the Minister of Transport says that all these projects are on hold.

So I see a collision course here, you know, which -- excuse me, the expression in traffic but you look at these phases more or less as mitigation measures, and now they suddenly disappear from the board.

So what is the influence that you have in order to maintain the safety of the workers going to site or the people living in the region?

MR. GOUGH: Jim Gough, for the

record.

We have been in ongoing dialogue with the Ministry of Transportation throughout the project. And they're certainly well aware that these improvements that we have documented in our TSD are basically essential for the accommodation of the project.

And there is a commitment, I understand, on the part of the Ministry of Transportation that as soon as the NND project moves forward that they will begin to reinitiate their plans for improvements, starting with the improvements to the whole road interchange which the transportation assessment would really, I think, indicate is the key to moving employees and contractors in and out of the Darlington site.

So they're certainly on board with the project at a staff level. And we have been having ongoing discussions with them. And perhaps OPG can elaborate further on the nature of that.

MEMBER BEAUDET: You have somewhere -- I can't remember the number of the table or the figure in the TSD document, the effects of transportation.

You have a full page of planning

over many years. And I would appreciate it if you brought us up to date as to what you feel will still go ahead with your table discussion with the Minister of Transportation?

And also to give us some idea of the priorities, I mean the things that you feel are essential to be done in order for this project to go ahead, please?

Not tonight, but --

MR. SWEETNAM: Albert Sweetnam, for the record.

In terms of the transportation improvements in the area, the first one is the whole interchange. That has been put on hold specifically because the nuclear project was put on hold.

As soon as we have a go ahead on the nuclear project, this will be released by the MTO, and the reason is, is because OPG’s funding a design.

So as soon as we release the money, they will -- the consultant is already on board and the work will proceed as soon as the project is a go.

In terms of the other major impact

in the area which would be the introduction of the 407 -- the 407 link coming down to the 401, the MTO has recently announced that this contract is out for bids and the first section of it will be completed by 2015 and the second section will be completed by 2020.

MEMBER BEAUDET: Thank you.

I have one last question, if I may?

CHAIRPERSON GRAHAM: Just a question, do you want an undertaking on the other or is that sufficient now what you've got?

MEMBER BEAUDET: Well, I'd like, if I may Mr. Sweetnam, your specialist to review this and if there's any more information that should be added concerning this proposed plan -- because they are things that are also -- not just with the Ministry of Transport but with the region of Durham and I would like to have an update on that please.

MR. SWEETNAM: We take an undertaking to -- Albert Sweetnam, for the record.

We take an undertaking to provide this updated table by Thursday morning.

CHAIRPERSON GRAHAM: Thank you, so

that will be undertaking number 2 put on the agenda for Thursday morning.

CHAIRPERSON GRAHAM: Madame Beaudet, continue.

MEMBER BEAUDET: This is the last item for me tonight. But the last item I have on my list will pursue during this week the subject regards the plume from a cooling tower.

The PNNL study refers to some pictures on the internet in their report that shows that with plume abatement there's absolutely no plume coming out.

Now, in your response or reaction or comments to this study, one of your comments refers to this plume and you say that there would still be a plume in winter, 20 percent of the time.

I agree with you that the climate is probably different than the climate when the picture is showing but I'd like this 20 percent to be substantiated and I'd like to take it as an undertaking. I think this is very important.

I know that you did not mention plume abatement because you were looking at the worse case scenario. But I think we have to clarify this aspect properly and if you say that if

your consultant says that there is still a possibility of 20 percent of the time during winter that there would a plume, I'd like to know how big that plume would be and why there would be a plume, if you could do that please? I would appreciate it.

That's all, Mr. Chairman, from me.

MR. SWEETNAM: Albert Sweetnam, for the record.

Rather than take an undertaking, we have our expert present that did the study from the U.S., Storm Kauffman will address this question.

Is he still here?

MR. KAUFFMAN: For the record, Storm Kauffman, MPR Associates.

We did do, sir, a subsequent study of plume abatement following our initial report to assist OPG in resubmission on IR-11. The 20 percent average plume appearance for a plume-abated tower is an average. It will vary depending on the exact meteorological conditions.

So in winter, the plume and the duration of the plume will vary. Some times of the year, you'll have a more substantial plume; at

other times barely visible and 80 percent of the time on average, you'll have no plume.

The picture that you mentioned on the internet is part of the advertising for the cooling tower manufacturer as a promotion for selling plume abatement technology and it does work but it doesn't work all the time.

MEMBER BEAUDET: I'd like you to clarify that when you say that you did see an evaluation for OPG, any of these results are in the technical support document? Because the visual effect goes at great length to show how big, how long the direction of the plume -- but those pictures do not include plume abatement, am I correct?

MR. KAUFFMAN: The picture in the -- or PNNL report does show that plume-abated tower. The pictures in the MPR report do not show plume abatement. Regarding the -- in fact the plume -- if you could give me a minute, I need to refer to a document.

MEMBER BEAUDET: Yes, go ahead please.

Do we have copy of the study you mentioned? Because I haven't seen any document

that talks of plume abatement evaluation.

MS. SWAMI: Laurie Swami, for the record.

We had asked MPR Associates to provide us additional support as we developed the response to IR-11 resubmission and so that information helped us to form the response to that particular information request.

CHAIRPERSON GRAHAM: I believe responding to your response how it was huge in that context, I accept that but I believe also it might be helpful to the panel members if that report could be made available. Is that all right?

MS. SWAMI: Laurie Swami, for the record.

We can provide a copy of that report tomorrow. And perhaps in the interest of time this evening, it would be helpful to wait for the discussion tomorrow that Mr. Kauffman is looking for right now, if that’s helpful?

CHAIRPERSON GRAHAM: Yes, thank you very much, that’s a very good suggestion.

Mr. Pereira, you have the final say in the questions tonight.

MEMBER PEREIRA: I thank you very

much, Mr. Chairman.

In your OPG PMD 1.1 in Section 1.2, there's a fairly high level description of the activities that would be undertaken by Ontario Power Generation in the phase licence to prepare the site and this includes excavation and grading the site.

Could you describe what measures OPG plans to implement to characterize and remediate contamination that you may find in the soil on the site and the source in ground water and what measures would you take to dispose of contaminated soil and water?

MR. PETERS: John Peters, for the record.

The assessment that we have done is characterized -- the soil conditions and the groundwater conditions, initially as found on the site today, we have provided detailed illustration of how we have monitored and characterized that through the EIS specifically.

We also point out that there has been a significant remediation effort for contaminated lands that were identified as part of the original Darlington construction and that

legacy contamination project has been completed.

The work that we are going to anticipate going forward will be to use modern standards for soil haulage and to test all soils before they leave the site, should they have to leave the site.

Obviously, our first choice as we've indicated, is to remain -- have all our soils remain onsite in a soil stockpiles at various locations that we've identified for bounding EA purposes.

There will be ongoing testing, as you indicate, before soils would -- or water would leave the site. And they are indicated in the in the EIS to be required to go to licensed facilities for receipt of those contaminated deposits.

MEMBER PEREIRA: Thank you.

And what would be the acceptance criteria for disposal of soil? Are there established criteria? What are they? Where are they found, are they in standards or provincial guides or provincial requirements?

MR. PETERS: These are standard requirements established through the Ministry of the Environment in Ontario.

MEMBER PEREIRA: Thank you.

CHAIRPERSON GRAHAM: Thank you very much.

This has been a good starting point for the day and this will conclude this evening's session.

And as mentioned earlier, tomorrow's agenda has been expanded to start with presentations from Natural Resources Canada, CNSC and OPG specifically on matters relating to seismic events in Japan.

These presentations have been added to provide everyone with the context regarding these issues. The balance of Theresa's schedule will proceed after the added presentation, and the panel will reconvene tomorrow at 9:00 a.m.

And I sincerely want to thank everyone for the orderly, courteous and successful way that we have rounded off day one. Thank you very much.

Good evening, and safe drives home, and for those that are interested we will see you tomorrow morning at 9:00 a.m.

--- Upon adjourning at 10:07 p.m.

C E R T I F I C A T I O N

I, Alain H. Bureau a certified court reporter in the Province of Ontario, hereby certify the foregoing pages to be an accurate transcription of my notes/records to the best of my skill and ability, and I so swear.

Je, Alain H. Bureau, un sténographe officiel dans la province de l'Ontario, certifie que les pages ci-hautes sont une transcription conforme de mes notes/enregistrements au meilleur de mes capacités, et je le jure.

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