DARLINGTON NEW NUCLEAR POWER PLANT PROJECT

JOINT REVIEW PANEL

PROJET DE NOUVELLE CENTRALE NUCLÉAIRE DE DARLINGTON

LA COMMISSION D’EXAMEN CONJOINT

HEARING HELD AT

Hope Fellowship Church
Assembly Hall
1685 Bloor Street
Courtice, ON, L1E 2N1

Wednesday, March 30, 2011

Volume 9
REVISED

JOINT REVIEW PANEL

Mr. Alan Graham
Ms. Jocelyne Beaudet
Mr. Ken Pereira

Panel Co-Managers

Ms. Debra Myles
Ms. Kelly McGee

Transcription Services By:

International Reporting Inc.
41-5450 Canotek Road
Ottawa, Ontario
K1J 9G2
www.irri.net
1-800-899-0006
(ii)

ERRATA

Transcript:

Page 86, line 5

We’ve looked at ways of streamlining that, so that when it comes into our facility, it doesn’t actually make into a radioactive area, so it doesn’t have to be declared radioactive as a precautionary measure, so we have now set up areas at Darlington where it can be screened on incoming.

Should have read:

We’ve looked at ways of streamlining that, so that when it comes into our facility, it doesn’t actually make it into a radioactive area, so it doesn’t have to be declared radioactive as a precautionary measure, so we have now set up areas at Darlington where it can be screened on incoming.

Page 245, line 11

As the Premier has said and the Ministry has said consistently, we will obtain the best deal for the rate payer.

Should have read:

As the Premier has said and the Minister has said consistently, we will obtain the best deal for the rate payer.

Page 249, line 18

on a periodic basis is that attitudes do no change

Should have read:

on a periodic basis is that attitudes do not change
TABLE OF CONTENTS / TABLE DES MATIÈRES

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening remarks</td>
<td>1</td>
</tr>
<tr>
<td>Undertaking status</td>
<td>5</td>
</tr>
<tr>
<td>Presentation by Mr. McKinnon</td>
<td>9</td>
</tr>
<tr>
<td>Questions by the panel</td>
<td>17</td>
</tr>
<tr>
<td>Presentation by Mr. Foreman</td>
<td>32</td>
</tr>
<tr>
<td>Questions by the panel</td>
<td>39</td>
</tr>
<tr>
<td>Questions by the intervenors</td>
<td>58</td>
</tr>
<tr>
<td>Presentation by Mr. Shier, Mr. Widmeyer, Ms. Usher and Mr. Levitt</td>
<td>62</td>
</tr>
<tr>
<td>Questions by the panel</td>
<td>76</td>
</tr>
<tr>
<td>Presentation by Mr. Lawson</td>
<td>92</td>
</tr>
<tr>
<td>Questions by the panel</td>
<td>101</td>
</tr>
<tr>
<td>Written submissions and comments by the panel</td>
<td>116</td>
</tr>
<tr>
<td>Presentation by Ms. Moore and Ms. Lawson</td>
<td>126</td>
</tr>
<tr>
<td>Questions by the panel</td>
<td>150</td>
</tr>
<tr>
<td>Questions by the intervenors</td>
<td>176</td>
</tr>
<tr>
<td>Presentation by Mr. Rudka</td>
<td>181</td>
</tr>
<tr>
<td>Questions by the panel</td>
<td>204</td>
</tr>
<tr>
<td>Questions by the intervenors</td>
<td>212</td>
</tr>
<tr>
<td>Presentation by Ms. Howarth</td>
<td>221</td>
</tr>
<tr>
<td>Questions by the panel</td>
<td>241</td>
</tr>
<tr>
<td>Questions by the intervenors</td>
<td>254</td>
</tr>
</tbody>
</table>

Je suis la co-gestionnaire de la Commission d’examen conjoint du projet de nouvelle centrale nucléaire de Darlington.

Secretariat staff are available at the back of the room. Please speak with Julie Bouchard if you are scheduled to make a presentation at this session, if you are a registered intervenor and want the permission of the Chair to ask a question, or if you are not registered to participate, but now wish to make a statement. Any request to address the panel must be discussed with Panel Secretariat staff first.

Opportunities to either -- of either questions to a presenter or a brief statement at the end of a session may be provided, time permitting. Denis Saumure of the Panel Secretariat staff who has been with us on the
podium since the beginning is being replaced today Pierre-Daniel Bourgeot.

We have simultaneous translation; headsets are available at the back of the room.

English is on channel one. La version française est au poste deux.

A written transcript of these proceedings will reflect the language of the speaker. Please identify yourself each time you speak to make the transcripts as accurate as possible. Written transcripts are stored on the Canadian Environmental Assessment Agency website for the project. The live webcast can be accessed through the Canadian Nuclear Safety Commission website and the archived webcasts and audio files will also be available on this site.

As a courtesy to others in the room, please silence your cell phones or any other electronic devices. Thank you very much.

CHAIRPERSON GRAHAM: Thank you very much, Kelly, and good afternoon everyone.

Welcome again to these hearings. And I want to welcome everyone that is here today, but also those that are joining us on live link -- by audio live link and on the internet. My name is Alan Graham
and I am the Chair of the Joint Review Panel. The other members with me here today on the panel are Madam Jocelyne Beaudet to my right and Mr. Ken Pereira to my left.

Starting each day or whenever we have something to report, we do a statement of procedure of written undertakings and -- oh, no, pardon me. We’re going to go first of all to a comment, I guess, on the statement of procedure which I gave an undertaking at the beginning with regard to how we would handle those. And I’ll ask my co-manager, Ms. McGee, to read what we are proposing. Kelly?

MS. McGEE: Thank you. In it’s statement of decision on procedural and preliminary matters, the Joint Review Panel committed to providing hearing participants the opportunity to submit written final comments. Hearing participants will have 20 days notice to submit written final comments to the panel and notice advising hearing participants of the exact due date for the receipt of final comments will be provided by the panel at the appropriate time. Final comments that do not meet the submission deadline will not be accepted.
Written final comments will be accepted from any individual, organization or Aboriginal group that has participated in this hearing. Written comments are to be -- are to briefly summarize the position and/or the opinions of the participant on the proposed Darlington New Nuclear Power Plant Project and any aspect of the review and to provide support for this position based on information that has already been presented to the Joint Review Panel. New information may not be presented in the final comment submission. Written final comments will also be accepted from the proponent, Ontario Power Generation. Ontario Power Generation is required to submit its final comments to the panel on 25 days notice.

As soon as this procedure for final written comments has been translated, it will be available on the Canadian Environmental Assessment Agency website and there will be additional details with regard to submission of the final comments. Thank you very much.

CHAIRPERSON GRAHAM: Thank you very much, Kelly. Hopefully that clarifies the procedure of written final comments and how we will
proceed with those so for those that -- that are
interested, hopefully this gives everyone a chance,
again, to -- to be able to be involved and provide
their comments.

We’ll begin this afternoon by
reviewing undertakings. That’s the procedure each
day. We look at undertakings that may be due and
Pierre-Daniel Bourgeot is here to go over the ones
that are due today and give comments.

--- UNDERTAKING STATUS:

MR. BOURGEOT: Before I go through
the list, I’d like to inform that the undertaking
list will now be on the CEAA registry. It will be
posted from now on. In the matter of undertaking
18 to OPG pertaining to projected off-site
groundwater tritium concentrations due today. Are
you ready to speak to those?

MS. SWAMI: Laurie Swami. Yes, we
are.

MR. BOURGEOT: Thank you. It’s my
understanding that undertaking 29 to OPG, to
provide site layouts incorporating -- thank you.

MS. SWAMI: Laurie Swami. So we
have the information and it will be provided at the
next break to the Secretariat as per the normal
process. This undertaking was to provide projected off-site groundwater tritium concentrations around the Darlington facility and OPG has provided a model -- the results of our modelling exercise which will provide the contour lines for the tritium concentrations. That will be provided in the submission that we're providing. It does show the increased, off-site concentrations with various contours, 100 becquerels and -- and decreasing with distance from the site. We anticipate that the concentrations that we're predicting are fairly conservative based on the fact that it's using the model that we have used traditionally throughout the studies as well as in our normal modelling exercises under the REMP program and that we would anticipate the concentrations will be much lower than those predicted at the off-site locations.

CHAIRPERSON GRAHAM: Thank you very much, Ms. Swami. Pierre-Daniel, the next one?

MR. BOURGEOT: In the matter of undertaking 29 to OPG to provide site layouts incorporating two-metre lake infill and various cooling technologies, we understand that we will be hearing this tomorrow; is that correct?

MR. SWEETNAM: Albert Sweetnam for

INTERNATIONAL REPORTING INC.
the record. We had indicated an extension -- yes, Friday, sorry, because we have to redo 16 drawings and they’re taking a little longer than we thought.

CHAIRPERSON GRAHAM: That’s so noted. That will be done for -- that undertaking will be on Friday. Pierre-Daniel?

MR. BOURGEOT: Thank you. CNSC in the matter of undertaking 20, worker tritium exposure and monitoring methodologies in Canada and bio-analysis results of tritium monitoring. It’s my understanding that this document has now been posted on the CEAA registry. In the matter of undertaking --

CHAIRPERSON GRAHAM: Just one moment, is that correct?

DR. THOMPSON: Patsy Thompson. Yes, that is correct, sir.

MR. BOURGEOT: In the matter of undertaking 30 to CNSC to provide a list of health studies that have been conducted in nuclear communities and the main findings and to provide details on methodologies. Are you ready to speak to that?

DR. THOMPSON: Patsy Thompson. We are in the final stages of putting the document
together so we should be able to file it with the Secretariat either later today or early tomorrow.

CHAIRPERSON GRAHAM: So we’ll give that undertaking to be completed for tomorrow and we’ll deal with it at tomorrow’s start of the hearings on procedural matters.

MR. BOURGEOT: In regards to undertaking 21 to Health Canada regarding recreational water quality, regulatory regime. We do not have it yet, but we will report back on it tomorrow.

CHAIRPERSON GRAHAM: That’s just Health Canada hasn’t been able to confirm so we’ll put it back on the agenda again tomorrow. Pierre-Daniel, do you have another one?

MR. BOURGEOT: That is the last item on the undertakings.

CHAIRPERSON GRAHAM: Well, thank you very much for that. As I say, we try and deal with them at the beginning of each day if we can get all the information, so that’s -- and if we don’t, we will come back to it whenever the information provides.

So with that, we’ll start today’s session. There’s a presentation from Power
Workers’ Union as outlined in PMD11P1.147 and PMD11P1.147(a).

And I understand that, Mr. McKinnon, you’re doing the presenting today, and you may want to introduce your fellow supporters.

Welcome. And the floor is yours.

--- PRESENTATION BY MR. MCKINNON:

MR. MCKINNON: Thank you, Chair.

Good afternoon and good afternoon to the members of the panel as well.

My name is Don McKinnon, and I am the president of the Power Workers’ Union.

With me here today on my left is Peter Faulkner, the vice-president of our nuclear sector.

And on my right, Robert Walker, our executive board representative from the Darlington nuclear plant.

Also present today are some of our PW elected representatives and staff, who we may call upon to assist us answering some of your questions.

We will focus our presentation today on the issue at hand, that being the environmental assessment for the construction of
new units at Darlington.

We will highlight the following topics, which are detailed in our written submission: The Power Workers’ Union, who we are, an overview; PW involvement in the regulatory process; health and safety; effective relationships; and then conclusion.

The Power Workers’ Union has represented the vast majority of the skilled workers in Ontario’s electrical, generation, transmission, and distribution systems for over 60 years.

We have represented the workers that operate and maintain all of Ontario’s nuclear power plants since their inception.

The PWU is affiliated with other labour organizations provincially, nationally, and internationally.

The PW coordinates the International Nuclear Workers’ Network.

Our knowledge, experience, and history qualify us as a vital incredible voice in public nuclear discussion and specifically to these hearings.

Our organization is in full
support of nuclear power being part of the electrical energy mix.

The PWU and its members will play a crucial role in construction, commissioning, operation, and decommissioning phases of the Darlington project.

Our experience with Canadian reactors is extensive.

Worldwide CANDU reactors have an impressive safety record with over 1,000 reactor years to rely on.

This experience tells us that our nuclear plants in Ontario have had minimal negative effects on the environment.

When assessing the relative environmental impact of other reliable sources of electricity generation, nuclear generation compares very favourably.

Nuclear stations produce vital -- virtually no greenhouse gases and use very little real estate to produce large volumes of reliable electricity 24 hours a day, seven days a week year round.

We are confident that a new plant at Darlington with new state-of-the-art
technologies will have even less impact on the environment than the older models.

Since 1972, our domestic CANDU reactors have displaced approximately 2.4 billion tonnes of greenhouse gas emissions that would have otherwise been produced from fossil fuel generation.

If we’re serious about making a real contribution towards a global effort to reduce greenhouse gases and minimize human impact on climate change in an energy-starved world, nuclear generation must be a significant part of the electricity mix.

This project is environmentally responsible, good for our provincial and federal economies, and good for the Durham region.

Our union has a long history of involvement in the nuclear regulatory processes.

We’ve been involved with many previous EA hearings in regards to nuclear plant refurbishment, waste management facilities, as well as nuclear plant license renewal and extension hearings, et cetera.

We not only work in the plants, our families live in the host communities.
Processes like this one are valuable tools in ensuring that the best interests of the public are assessed and acted upon appropriately.

The PWU also has a history of participating in other forums, for example, the recent House of Commons standing committee on natural resources hearings regarding Bruce Power’s plans to ship steam generators to Sweden for recycling.

We believe that it is our responsibility to bring forward to these forums the views and experience of the people who perform the day-to-day work in our nuclear facilities.

Their views, we suggest, are very important to ensuring that public -- that our nuclear facilities are, in fact, the most highly regulated industrial workplaces in Canada, and the safety record is exemplary.

There is an obvious convergence of safety interests between the industry’s employees and the general public, and we in the PWU believe that uncompromising approaches to workers’ safety and health sets the table for public safety and environmental performance.
This is why we feel it is appropriate in these submissions to approach nuclear safety from the workers’ perspective. We have, over the years, worked with OPG to create mechanisms and forums to address and improve workplace safety issues and our concerns.

We have written -- submission outlines -- our written submission outlines the legal and negotiated forums that are currently in place. This is a mature and continuously-improving relationship.

OPG and the PWU will be the labour management partners in the operation of the new facility. And our proven safety processes and committees will bring experience and confidence to the site.

Effective and successful labour relations between OPG and the Power Workers’ Union has a track record for more than 60 years.

I mentioned before this is a mature relationship. OPG relationships with construction unions that will supply the thousands of skilled workers needed to build the new facility have also been in place for more than 60 years.
The PWU and the construction unions have good working relationships with OPG and with each other.

The parties have developed unique processes to resolve issues expeditiously.

The Darlington project will bring tremendous economic benefits to the community for many decades to come.

The local host communities have been very supportive of this project moving forward as soon as possible. They understand the benefits that this type of facility brings because they’ve experienced them.

OPG has been a first class corporate citizen in the communities surrounding the existing Darlington and Pickering plants.

Continuous dialogue with the workplace parties as well as public leaders at the community, provincial, and federal levels have proven successful, and we have every reason to believe this dialogue will continue as an open and thoughtful -- into the future.

In conclusion, we in the Power Workers’ Union base our support for this project on the history of the current nuclear plants in
They have operated safely for over 40 years. This is excellent technology that has continuously improved without causing any significant, detrimental effects to workers, the public, or the environment.

The PWU is in full support of the OPG assessment as supported by CNSC staff, that this project will have no significant effect on the environment.

This project will provide clean, affordable, reliable, environmentally-responsible, and secure electricity to the province for many decades to come.

It will also bring with it thousands of high-skilled, high-paying jobs for 60 years.

It will help minimize our reliance on greenhouse-gas-omitting fossil-fuel-generated electricity.

We encourage the panel to approve this project expeditiously and to have the CNSC issue and prepare the site license so this project can proceed for the benefit of the people of Ontario.
We would be pleased to answer any questions you have.
And all of that is respectfully submitted.
CHAIRPERSON GRAHAM: Thank you very much, Mr. McKinnon.
The procedure we follow, and you’re probably familiar with that, we go to panel members first, then to other participants.
And I’ll start off with Mr. Pereira.
Do you have any questions to the Power Workers’ Union?
--- QUESTIONS BY THE PANEL:
MEMBER PEREIRA: Thank you, Mr. Chairman.
I am pleased to read in your submission about the consultation that OPG has engaged in in taking the project forward and that the Power Workers’ Union participated in consultations with OPG. What were the primary concerns raised by Power Worker Union members with respect to this new project?
MR. MCKINNON: Through you, Chair.
No --

CHAIRPERSON GRAHAM: Just at --
pardon me, just would everybody state their name
first, because for the transcript --

MR. McKINNON: Don McKinnon.

CHAIRPERSON GRAHAM: -- for the
transcripts afterwards. Thank you.

MR. McKINNON: Thank you, Chair.

Don McKinnon, and through you, Chair. I guess the
one issue that we’ve been chasing for a number of
years now is the ability to move staff from the
Pickering site, which is supposed to close by 2020,
into the Darlington new build area. So from our
perspective the sooner this can proceed the sooner
we can develop a plan with OPG on how to make those
-- those transfers happen.

MEMBER PEREIRA: Thank you. But
with respect to health and safety and protection of
the environment, were there any issues that your
members brought up in those consultations?

MR. McKINNON: No more than the
ongoing kind of health and safety issues we deal
with on a regular basis within the plant.

MEMBER PEREIRA: Thank you. In
your assessment of the project ahead, what health
and safety challenges do Power Worker Union members foresee in the site preparation and construction phases given that over those two phases there will be a number of contracted staff and a transient workforce on site. Are there any concerns that you might have about what needs to be done to ensure health and safety?

MR. McKINNON: Don McKinnon, through you, Chair. We have, in our history, had a lot of experience in dealing with large influxes of construction workers. We’ve just dealt with a situation at Bruce Power, we had a large influx of construction workers. It’s a logistics issue, it’s one that we’ve experienced and dealt with in the past. There are no significant issues that we’re aware of at this time.

MEMBER PEREIRA: Thank you. My final question. In your presentation you spoke about the experience Power Worker unions have on nuclear sites, working primary with CANDU reactors, and it’s been a very positive -- you said it was a very positive experience. What do you foresee will be the challenges if Ontario Power Generation and the Ontario government choose to go with a different technology, something other than CANDU?
MR. McKINNON: We would see no reason to go with anything -- Don McKinnon. We would see no reason to go with anything but CANDU, but -- since it’s performed so well. But to answer your question, I think on the conventional side, workers are readily adaptable. On the -- on the other side, on the radiation nuclear side, the operating side, there would be some time to train and re-skill workers, but the time leads are long in construction of a nuclear plant. That would give us ample time to set up that training rigor and have those people prepared to operate a plant of another technology.

MEMBER PEREIRA: Thank you, Mr. Chairman.

CHAIRPERSON GRAHAM: Thank you, Mr. Pereira. Madam Beaudet?

MEMBER BEAUDET: Thank you, Mr. Chairman. Good day, everyone.

I’d like to look with you on the procedure or the protocol you have when -- it says that when there’s an incident that is brought up and it’s not resolved, or an issue or concern, it has to go first to the joint policy committee on health and safety. And then eventually to, you
recently put in place TWU or OPG Nuclear Corporate Health and Safety Committee.

What I’d like to know is does it happen often that you -- you know, it ends up, because obviously -- to this last committee, because obviously if it was put up, there must have been some reasons, and we’ve discovered in recent years, for instance, with the army or with pilots of airlines, how sometimes, you know, they are forced to do certain things and nobody dares to say anything because there’s a culture of usually where you have to be tough, and if you complain too much, you’re sort of an outcast.

So I’d like to understand why this Nuclear Corporate Health and Safety Committee, Joint Safety Committee was -- was put on and how often issues have to -- that are brought up and not resolved to the workers’ satisfaction have to be brought up to the joint health and safety working committee, and what would be the natures of those issues?

MR. McKINNON: Don McKinnon, through you, Chair. The Corporate Health and Safety Committee is a policy committee. It deals mainly with policy and direction with regards to

INTERNATIONAL REPORTING INC.
health and safety. Almost all of our workplace
issues are settled either on the shop floor between
the worker and the supervisor immediately, or with
the local joint committees, which is where the bulk
of the work gets done. The policy committee that
you -- was referenced in the question is an
oversight committee, it’s a policy committee.

MEMBER BEAUDET: And what is the
frequency of issues brought on the floor? I mean,
is it every year, every week, every month? Do you
have any statistics on the numbers that have to go
to the joint health safety committee?

MR. McKINNON: Through you, Chair,
Don McKinnon. Those committees meet regularly as
required. They deal with a series of issues, and I
can call on one of our folks present to give
specifics. But if you rate the activity with
regards to work refusals, I think there was one
work refusal at Darlington last year. So there are
not a lot of issues that get to the point where --
where the refusal process kicks in. They’re almost
dealt with in total at the local joint committee.

MEMBER BEAUDET: Thank you. I’d
like OPG to comment on that, please, if you have
any comments.
MS. SWAMI: Laurie Swami. We work with our PWU and society represented staff through the joint health and safety committees as they have spoken about. I can’t speak specifically to the Darlington situation, I’m not involved in that particular joint health and safety committee, but we work with them. They bring issues to the table for resolution. It’s PWU’s society and management represented at those forums. They’re brought to the table, management is at the table to help with resolution of any issues that are raised. That management rep reports in to the management team at the facility where the -- where the incident or concern may be raised, and it gets addressed through that process.

We have many processes for addressing concerns that employees raise. One of them is through just dialogue between the worker and their supervisor, which we like to use as the first -- first method for resolving any issues that could come forward. We also have the station condition record program where an employee can raise an issue in confidence if they choose to, to be addressed by the management team. And those are reviewed on a regular basis, daily at the sites, to
ensure that management understands what the issues
are that are being raised, and that they get
resolved in a speedy fashion, if you will. And
then if those systems are not successful, then they
usually come to the joint health and safety
committee as a way of resolving ongoing issues, if
you would, that couldn’t be resolved at those lower
level means.

And so that -- that process is
effective, I believe, at resolving the issues
raised by the PWU. We have a similar process with
radiation protection as well, that they would have
that opportunity through the joint committee on
radiation protection.

MEMBER BEAUDET: Thank you. Have
you already set up or are looking to organize a
sub-committee with lessons learned from Japan, or
to discuss with your members how it can be
approached and how you can put forward
recommendations?

MR. McKINNON: Don McKinnon,
through you, Chair. I think it’s premature at this
stage to try and work out what lessons have been
learned there. It’s still much -- very much an
active situation.
To answer your question, we have no done that as yet. We will be interested, as will everyone else, on what comes out of that at the end, but I think it’s premature at this stage for us to engage without accurate information.

MEMBER BEAUDET: I agree with you.
I was just checking if there’s the will or if you feel there is the necessity eventually to do such an exercise.

MR. McKINNON: Through you, Chair, Don McKinnon.
I think it’s absolutely essential that we as workers in the nuclear industry, along with the industry, learn whatever lessons are -- are there to be learned from any such event.

MEMBER BEAUDET: Thank you. My last point was page 16 of your written submission. The fourth paragraph, you say, “The power worker unions consider the CNSC staff recommendation to be prudent and appropriate and, as a result, supports this approach.”

When we look at -- and this is in the section of your submission that refers to the licence to prepare a site. I’d like to check with you here if you refer only to applicable regulatory
expectations in terms of doses to worker because I believe when we look at the PMD of CNSC, which for the licence to prepare a site, is 11-P1.2(b) on page 80, they look here only in terms of radiation protection, but other aspects like fitness for service, safety analysis is considered here, and not within the scope of the PMD, of the -- the one for the licence to prepare site.

It would, I presume -- I'll ask CNSC afterwards -- presume it would be more detailed in the licence to operate. So I just want to check this point with you, that when you -- you agree with the PMD of CNSC is that it’s only in terms of doses to workers because there’s no other details regarding safety analysis or anything else is looked at in their document? I just wanted to check this with you.

MR. McKINNON: Don McKinnon, through you, Chair.

We base that statement on the information we had available to us that was available to the panel as well.

MEMBER BEAUDET: Would it be in the OPG documents or in -- in what you refer to the PMD that came from CNSC?
MR. McKINNON: We’re referring to the CNSC conclusion.

MEMBER BEAUDET: Can I have some comments on this from CNSC, please?

CHAIRPERSON GRAHAM: Dr. Thompson?

DR. THOMPSON: Patsy Thompson for the record. When we read page 16 of the intervention, we understood that it was referring to the staff’s conclusions on the environmental assessment in relation to implementation mitigation measures and the recommendations that CNSC staff has made to the panel.

MEMBER BEAUDET: That’s what I first thought as well, but then the -- this section talks of health and safety as well, so that’s why I wanted to check with the presenter.

MR. McKINNON: Don McKinnon through you, Chair.

I think we separated out the notion of health and safety in the -- in the first paragraph. The second part talks about -- based on the CNSC staff conclusions.

MEMBER BEAUDET: But the first paragraph when you say, “Applicable regulatory expectations,” you refer here to doses to workers?
MR. McKINNON: When we refer to
the health and safety aspect, we’re referring to
OPG’s ability to carry out that activity.

MEMBER BEAUDET: Thank you.

CHAIRPERSON GRAHAM: Thank you,
Madame Beaudet.

I just have one question and I
guess maybe it’ll have to -- it might be to OPG,
but to start off with, just to clarify. When the
deputy minister was here from Queen’s Park last
week, we -- we discussed technologies because --
and he said the government’s preference certainly
was CANDU, but with all the uncertainties around
AECL and so on and not knowing when it'll be sold
or if it'll be sold and so on, that the government
some day may have to revert to another technology
and that’s why -- that was why Mr. Pereira asked
those questions.

My -- my question to OPG on this
would be will you -- if another technology is -- is
decided, how soon or how will you proceed with
training with assimilators and so on because there
generally are for the CANDUs? What is the plan --
what would the plan be to -- to establish a
training centre for a new technology so that the
workers could be trained?

MR. SWEETNAM: Albert Sweetnam for the record. If -- if the CANDU technology is not selected and -- and Ontario selects a different technology, and even if we went with the CANDU technology as part of the -- the EPC contract, there's a requirement for training. And that training is actually spaced out across the full construction of the contract because it’s essential that your trained personnel actually participate in the -- the build of the project and also in the commissioning of the project.

As well, part of the EPC contract requires the early delivery of a simulator, so the operators would be hired well in advance of the delivery of the simulator, so they would already have been partially trained before the simulator comes on site. Several of the -- with the -- the exception of the CANDUs, if it were an EPR and an AP1000, they -- they already have simulators that are operating either in Europe or in the U.S. They already have sites that are under construction that we can send staff to for training. So the training actually, as part of our plan, in terms of the -- the staff that are finally -- will operate the
site. These staff start to come on board approximately one year after we sign the contract, so well in advance of the actual commissioning and operation of the plant. So it’s a very, very extensive training program that is administered by the EPC contractor, but supported by OPG.

CHAIRPERSON GRAHAM: Mr. McKinnon,
do you have anything to add to that because that was a concern with regard to -- perhaps of not being a CANDU technology and how will unions and how will the labour force adapt to another technology in a plant that has CANDU on one side and something else on the other?

MR. McKINNON: Nothing to add really other -- Chair, Don McKinnon -- other than we have experience with moving people from one set of units to another. They -- they do differ. We have experience with training people who come to us from the street, if you will, or out of school to the level required to make them qualified to operate these units. We have every confidence that given the lead times and the training technologies available to us that we could, in fact, train people to the degree required if we needed to. We don’t believe we should go that route, that CANDU
would make the most sense, but we could be prepared
if we had to be.

CHAIRPERSON GRAHAM: That’s right,
because that decision may not be -- not -- may be
in someone else’s hands to decide.

The other question I have without
getting into detail because of the sensitivity of
it, but is your union and your power workers union
satisfied with the site security that is being
proposed for the -- for the new build?

MR. McKINNON: Yes, we are.

CHAIRPERSON GRAHAM: Thank you.

With that, we’ll now go to -- to questions from the
floor, which in the way we -- we do it, sir, is,
first of all, we go to OPG. And do you have any
questions for the Power Workers Union, Mr.
Sweetnam?

MR. SWEETNAM: Albert Sweetnam, no
questions.

CHAIRPERSON GRAHAM: CNSC, do you
have any questions?

DR. THOMPSON: Patsy Thompson, no
question.

CHAIRPERSON GRAHAM: To government
agencies and departments that may be here, whether
they be federal or provincial if there are none, I see none, then we will go to intervenors, and my understanding is we have no intervenor questions from the floor.

So with that, a special thank you, Mr. Mckinnon, and your team for presenting to us today, and wish you all the best.

(SHORT PAUSE)

CHAIRPERSON GRAHAM: The next presenter on deck is the Canadian Association of Physicians for the Environment, as outlined in PMD 11-P1.83 and P1 -- pardon me, 11-P1.83A, and I understand Mr. Forman, who is the Executive Director, is doing the presentation today on behalf of the Canadian Association of Physicians of the Environment -- or for the Environment. So, Mr. Forman, the floor is yours.

--- PRESENTATION BY DR. FORMAN:

DR. FORMAN: Am I on now? Thank you. Thanks very much, Mr. Chair. I’m going to keep my remarks fairly brief, and then I’d be happy to answer any questions.

Ever since the discovery of radioactivity at the turn of the last century, it’s been recognized that ionizing radiation has a
deleterious impact on human health. Radiation damage can affect any part of the cell and can therefore interfere with many cellular processes, most importantly, damage to the genetic material of the cell can lead to cancer, birth defects, and hereditary illness.

It’s generally accepted by the scientific community that there’s no safe level of radiation exposure, and that any amount of exposure to ionizing radiation is harmful.

Standards of acceptable exposure in Canada and elsewhere have been reduced many times over past decades as evidence has mounted of more deleterious health effects. All stages of the nuclear fuel chain have their associated toxicity, and I think that, Mr. Chair, that’s really our contribution to this discussion, that we do want to look at the full cycle when we look at the Darlington new build issue.

There’s continuing risk of accidents or meltdowns, of course, which could release large amounts of radioactivity, such as occurred at Three Mile Island, of course Chernobyl, and as we’re seeing the developing unfolding in Fukushima. Much of the long-lived radioactive
contamination we are spreading into our environment
now is essentially permanent and irreversible.
So doctors are concerned about the
health risks associated with the nuclear power
industry at all stages, from uranium mining to the
efficient process in reactors to radioactive waste.
So to begin, uranium mining
contaminates air, water, and soil. Crushing
radioactive rock produces dust and leaves behind
fine radioactive particles subject to wind and
water dispersal, radon gas, and potent lung
carcinogens is, of course, released continuously
from the trailings in perpetuity.
Drilling and blasting can disrupt
and contaminate local aquifers, water used to
control dust and create slurries for uranium
extraction becomes contaminated.
Tailings contaminants can
potentially leak, leach, or fail releasing
radioactive material into local waterways. Various
organisms can, of course, transport radioactive
material away from contaminated sites. These sites
remain radioactive for many thousands of years, and
will remain unsafe for most human purposes as well
as being a source of continuing contamination for
surrounding populations.

Uranium refining and enriching facilities release radioactive contamination, which can impinge on nearby populations, of course, and these processes also necessitate transportation through rail or truck, and this, of course, carries with it the risk of accidents or spills with further risk of air, water, and soil contamination.

All functioning reactors, as we know, routinely release radioactive material into the air and into the water used to cool them. I don’t think there’s any debate about that. As part of the normal operations, they are continuously releasing radioactive material.

Here in Canada, Tritium, a carcinogen and mutagen, is given off in abundance by our reactors because of the dependence on heavy water as a moderator, and, of course, several Canadian reactors, particular those at Pickering and Darlington, are located near large populations needless to say.

One of the potential health risks of this industry is the highly toxic spent fuel produced by the reactor. To date, there’s no truly safe way to dispose of the spent fuel, which
remains radioactive for, as we know, hundreds of thousands of years. Geologic storage, which consists, of course, of burying the waste deep underground is being considered but carries the risk of potential contamination of air and water and other as yet unknown risks. And, of course, even if we get the storage right for, say, the first 10,000 years, that does leave hundreds of thousands of years after that if there are leaks. So even if we get it right for the first part of time, there’s still hundreds of thousands of years after that during which the highly toxic radioactive waste could be released into the environment.

Let me say a word now, Mr. Chair, about the health studies. Health studies done worldwide and in Canada have uncovered links between chronic low level radioactive emissions from nuclear reactors and cancer, especially childhood leukemia. Of course, the most famous of these is the 2008 German KIKK study done by the government there, and that provided compelling evidence of a positive relationship between a child’s risk of leukemia and residential proximity to a nuclear power plant. And as you know, that
was a very strong study.

Methodologically, it was a case control study, and what they found, not surprisingly, we believe, was that -- and this was consistent across all the 16 reactors in Germany, was a positive relationship between a child’s risk of leukemia and residential proximity to the plant.

More specifically, Mr. Chair, children under five who lived within five kilometres of the plant were at an extreme elevated risk for leukemia. As they got further from the plant, there was still a risk but somewhat lower.

Though there are relatively few Ontario studies on the subject, the Atomic Energy Control Board, AECB, undertook several studies in '89 and 1991, which found an increased prevalence of leukemia in children living near nuclear facilities. Another AECB study suggested a higher rate of childhood leukemia corresponding to higher radiation exposures of fathers, the largest risk associated with fathers who worked in uranium mining.

Of course, there’s the Radiation Health In Durham Regional Study from four years ago, 2007. That was an ecological study. It
looked at a number of health outcomes in the vicinity of Pickering and Darlington, and the authors found statistically significant increases, as you know, compared to Ontario levels in combined cancers, breast cancer, thyroid cancer, bladder cancer, and multiple myeloma and also leukemia, which offers some further support for the KIKK study in Germany.

So there is mounting evidence that even very low levels of radiation exposure may have serious deleterious health effects over the long term. These are detectible in nuclear workers and in the general population in the vicinity of these nuclear installations.

So given that the dissemination into the environment of radioactive material, particularly the long-lived isotopes, is essentially irreversible and that such material will remain toxic for thousands of years and in some cases hundreds of thousands of years, we, as a doctors organization, believe that a precautionary approach is critically important.

Since much of the genetic denamge [sic] -- genetic damage is permanent and may be cumulative, we believe this becomes even more
crucial. And so family doctors are concerned about
the public health risks of -- of every stage of the
nuclear industry, and in conclusion, we argue
against any new build at Darlington.

Thank you, Mr. Chair, and I’m
happy to answer questions as much as I’m able.

--- QUESTIONS BY THE PANEL:

CHAIRPERSON GRAHAM: Thank you,
Mr. -- thank you very much, Mr. Forman. I will
open the floor now to questions from panel members,
and I’ll go first to Madame Beaudet.

MEMBER BEAUDET: Thank you, Mr.
Chairman. I’d like to go, in your written
submissions, on page 13.

DR. FORMAN: M’hm.

MEMBER BEAUDET: In the third
paragraph where you say that nuclear industry
workers are allowed to receive 20 and they receive
an average over five years.

DR. FORMAN: M’hm.

MEMBER BEAUDET: Such an exposure,
according to the International Commission on
Radiation Protection Guidelines, would be expected
to generate 3.2 excess cases of fatal cancer per
hundred workers over a 40-year career. And then
you go on and say this is in contracts to whether -
- contrast to whether industrial toxicology
situation in which 1 in 10,000 to one million
fatalities are considered acceptable.

I’d like to hear you a bit more
about the excess cases of fatal cancer, and then
with the other one, you talk of fatalities, what
would be the difference here?

DR. FORMAN: I don’t think there
would be an important difference.

MEMBER BEAUDET: No?

DR. FORMAN: Fatalities from
cancer and general fatalities.

MEMBER BEAUDET: You mean that the
nuclear industry would generate 3.2 cases of fatal
cancer, is that what you’re saying?

DR. FORMAN: Yes, that’s right.
That’s based on the research that our doctors have
done, correct, yes.

MEMBER BEAUDET: And this is from
a study from the International Commission on
Radiation Protection?

DR. FORMAN: Correct.

MEMBER BEAUDET: Can we have
comments on this from CNSC, please.
CHAIRPERSON GRAHAM: Dr. Thompson.

DR. THOMPSON: Patsy Thompson for
the record.

One of the issues with the
statement as the -- the ICRP has developed risk
factors for radiation exposures and have
recommended dose limits, and the dose limits in
Canada is 50 millisievert per year or no more than
100 millisievert over a five-year period.
The vast majority of workers
receive less than one to five millisievert per year
of exposure. The calculation that is done is a
calculation of -- if someone would receive that
exposure over a lifetime and what would be the
calculated number of cancers based on the linear
no-threshold relationship and an exposure of 20
millisievert during the 40-year period of work.
This is essentially a calculation
from a model, but if we compare this calculation of
three excess cancers per 100 workers, there have
been numerous studies done internationally of
nuclear energy workers where hundreds of thousands
of workers have been followed for long periods of
time and we don’t see elevated risks of cancers in
relation to the general population.
So the -- in general, the ICRP framework is used for radiation protection and it is a framework that allows us to take protective measures. And the framework is accompanied by a requirement that’s also in the CNSC regulations to keep doses as low as reasonably achievable, which is why doses to workers in the Canadian industry are very low.

MEMBER BEAUDET: So we talked in the first case of a risk factor and in the second case what is acceptable in terms of fatalities and frequencies or probability or likelihood?

DR. THOMPSON: Patsy Thompson for the record. As a toxicologist, we -- there are number of ways of developing, for example, air standards or other standards to limit exposure of workers for the general public to -- to toxic chemicals.

And the starting point in determining standards generally range between one and 10,000 and one and a million risk, but those are calculated risks, using generally for chemicals that are carcinogens, a linear no-threshold relationship as well.

And these form the basis for
looking at a development of standards. In fact, the standards range in risk factors depending on the ability to control risks in a workplace or in the environment. And so actual standards vary in risk level, but the -- the approaches to keep risks as low as possible, which is also the approach used for regulation of work practices and releases to the environment for radiation.

MEMBER BEAUDET: Do you have any comments to that?

DR. FORMAN: No specific comments to -- except to make the general point that we think it’s unfortunate that any group of workers in the country should be exposed to radiation and that’s why we support a phase-out of nuclear energy and a movement to conservation and renewable energy sources, so that the workers won’t be exposed to this.

Even if the -- even if they’re relatively low, they’re larger than the exposures of the general population. We don’t think anyone should put his or her health at risk as part of his job or her job.

CHAIRPERSON GRAHAM: Mr. Forman, each time, would you introduce yourself?
DR. FORMAN: Pardon me.

CHAIRPERSON GRAHAM: For the transcript. Yes, thanks.

DR. FORMAN: Sorry, Mr. Graham.

Gideon Forman.

MEMBER BEAUDET: My second point is on page 32, the third paragraph, you say the study -- this was the Radiation and Health in Durham Region Study.

The study did not find many clear regional patterns in this. However, despite the limitations of this study, there were some positive findings.

For instance, elevated rate of illnesses compared to Ontario levels. And you name, like, the rate of neural tube defects was increased significantly, et cetera, so you -- for this study you consider that there was a relation that was proven, but it never reached significance because of the small number of people that were -- that were evaluated. Am I correct?

DR. FORMAN: With respect -- Gideon Forman for the record, with respect to the Durham Region Study, the authors did find statistically significant increases compared to
Ontario levels in some cancers. Rates of other cancers did not reach statistical significance. They are still worrisome, but they did not, so in some cases, yes, they reached statistical significance and in other cases, they did not.

MEMBER BEAUDET: Can I have comments from CNSC, please on that?

DR. THOMPSON: Patsy Thompson for the record. I will provide a general statement in terms of the Durham Study and then I will ask Ms. Rachel Lane to provide some details specific to this study.

The study concluded that the -- there was no relationship essentially between living in -- in the community of Durham close to either Pickering or Darlington and an increase in health effects. That was the general conclusion of the study.

Essentially because there were issues with the -- the appearance of certain diseases over time and between groups, but I will ask Ms. Lane to provide the details.

DR. LANE: Rachel Lane, I’m --

CHAIRPERSON GRAHAM: Ms. Lane?
DR. LANE: -- the acting director of Radiation and Health Sciences Division in the CNSC. As Dr. Kyle spoke about the study that he was the principal investigator for, they looked at very many different causes of death, birth defects, cancer incidents and so on. As well, as information on the radiation exposures within the community.

Yes, they did find some variation in disease, which is natural for any community. You find natural variation in diseases. However, what they were looking for was indications of major trends for important diseases associated with the emissions from the nuclear power plant, the ones that you most likely see.

When they did this, overall they did not find any consistent indications that the diseases were higher than normal. They looked at different age groups, different -- they looked at different sexes and different areas within the community. And the overall decision was that there was no adverse health effects.

They also did a study previously and these -- and this 1997 study was consistent with their earlier study. They also have done two
snapshots. One on cancer and one on birth defects in children in the community and all four of these major studies -- these studies that were done in Durham have consistent findings. Thank you.

CHAIRPERSON GRAHAM: Thank you.

Madam Beaudet?

MEMBER BEAUDET: I would like to know a little bit more about your organization.

DR. FORMAN: Of course.

MEMBER BEAUDET: Are your physicians working in health centres or are you physicians that have concern with the nuclear industry and have regrouped as a movement across Canada?

DR. FORMAN: Through you, Mr. Chair, Gideon Forman. Our physicians are of various backgrounds. Some are family doctors, some are specialists. We do have on our Board some expertise in -- specifically in nuclear energy and human health, Dr. Cathy Vikeo (ph), one of our Board members, a professor at Queen’s University is one of Canada’s experts in that field and she advises us on the issue.

MEMBER BEAUDET: The reason I’m asking that is I would like to hear from you -- I
think some of these studies would probably need follow-ups and I was wondering if you have any recommendations to that effect?

DR. FORMAN: Through you, Mr. Chair, Gideon Forman. I’m not sure what you mean precisely by follow-ups?

MEMBER BEAUDET: Well, you did give us a broad picture of all the different studies and some you say that haven’t reached, for instance, significance in some aspects. Do you have any proposals where you feel that the Commission should recommend further studies and what -- what region have you discussed that aspect?

DR. FORMAN: Through you, Mr. Chair, Gideon Forman. Our overall trajectories, we believe that the science from around the world is sufficient at this point that we should not be going ahead with the new build.

That said, we’re always happy to see more science done. Much of the Ontario science, as you know, has been ecological studies. We would like to see stronger studies, similar to the ones done in Germany, which are case controlled studies, so that would be a recommendation that more research could be done with a case control
study in the region of Darlington and Pickering.

But we don’t feel that we need to wait for those
because we feel that there’s ample evidence from
around the world, from a number of countries in
over the past 30 or 40 years that we believe
there’s enough reason at this point to be
precautionary and stop the Darlington new build,
but we do always welcome new science. We’re a
science-based organization.

MEMBER BEAUDET: Thank you.

Thank you, Mr. Chairman.

CHAIRPERSON GRAHAM: Thank you,

Madam Beaudet.

Mr. Pereira?

MEMBER PEREIRA: Thank you, Mr.

Chairman.

My first question is directed to
the CNSC. We have received a number of
submissions from different intervenors on the
question of the impact of radiation doses on
health, and a number of them take the position that
even radiation at very low levels lead to risks of
developing cancers and leukemia, serious illnesses.
And then there’s another school of intervention
that say that at very low levels the beneficial
effects; and then the middle road which says there’s no -- that there is a threshold below which those significant effects occur. Now, I know that you -- CNSC staff has an undertaking to provide us with some information on health studies that have been done in Canada over the last few decades on the impact of the nuclear industry on health of workers and the public. Will this submission you’re providing to us address this issue of linear no-threshold, no significant effects, possible health benefits of low doses, because this complete -- the whole spectrum of possible outcomes. And for us as a panel, we’d like to be -- have a discussion of the full picture of what the different theories are. Is this something that will be covered in your undertaking?

DR. THOMPSON: Patsy Thompson for the record.

I will provide some details this afternoon, and since the undertaking isn’t finalized, we can add information on the -- the different models and the different evidence for -- for the things you’re talking about. But essentially just to provide some information, there
are -- and some of the studies that have been quoted by the intervention 38, is to the effect, for example, talking about radium dial workers that were exposed to radium, those were studies that were done extensively because of the exposures that were found, and these studies have shown that for bone cancer, for example, there’s a threshold dose of radium of 10 sievert, so it required a very high does to cause bone cancer. And that cancer was found to have a threshold for 10 sievert, so below 10 sievert there was no bone cancer.

The intervention also speaks to fetuses who were exposed because their mothers received x-rays. And those epidemiological studies have also shown that doses to the fetus of less than 10 to 20 milliseverts have not resulted in increased cancer risk and genetic or thoracogenic effects in the children born from the mothers who were exposed through x-rays.

So there’s a variety of evidence that sort of says -- indicates that at the doses typical of -- the environmental doses around nuclear facilities, doses at which -- to which workers are exposed, are not related to health effects.
There’s also a lot of studies that are being done in the very low dose ranges to understand the mechanisms, the biological mechanisms of radiation effects, and those studies give essentially a range of results from effects of -- on cells that are not directly exposed. And there’s also a number of studies that -- and we have some interventions where low doses appear to provide some protection for higher exposures.

These are not unique to radiation. In toxicology this is a well-known phenomenon. It was first studied when people were looking at the -- stress related to heat shock, so heat shock proteins, where -- and it’s been known for cadmium and other contaminants as well, at very low exposures you trigger a cell or an organism’s ability to react to stress, so it’s a stress response phenomenon, and it’s known to increase cellular responses at low exposures. But the mechanisms are not well understood for radiation, and they’re quite variable within individuals, and so generally internationally the consensus is that we are not able to rely on information that shows that low radiation exposures would be protective as a basis to protect human health and safety. So we
continue to go with the linear no-threshold relationship.

MEMBER PEREIRA: Thank you.

This is for clarification. Now, in some of the submissions we’ve received and in some of the presentations, there have been references to ecological studies, case control studies, cohort studies, and for us as a panel, these are jargon terminologies.

In your submission will there be an explanation as to how powerful these techniques are in identifying relationships between exposures and statistical confidence and results of this going to be covered?

DR. THOMPSON: Patsy Thompson, for the record.

Yes, it is.

MEMBER PEREIRA: And something that came up in your response, you referred to possible consequences in a fetus. And I’m aware that in Canada and in many countries there are different limits for possibly pregnant workers. Is this something that would be in the studies that have been done, and what you’ll be reporting on?

DR. THOMPSON: Patsy Thompson, for
the record.

In the CNSC Radiation Protection Regulations the dose limit for a pregnant worker once the pregnancy has been declared, is four milliseverts for the balance of the pregnancy. And so a four millisevert dose to the individual would result in a much lower dose to the fetus, and that dose is much lower than doses that have been shown to cause health effects in the fetus, when children are born.

MEMBER PEREIRA: So that in a sense is a side issue is what you’re saying?

DR. THOMPSON: Patsy Thompson.

The studies that were done looking at effects on -- on the fetus from either the atomic bomb survivor studies or the exposure of work -- of women from x-rays or Chernobyl are provided in the undertaking that we will be submitting.

MEMBER PEREIRA: Thank you.

Mr. Chairman, with your permission I’d like to suggest that when we receive the submission on the undertaking that we look to see whether we need a further submission as background to our review of the assessment.
CHAIRPERSON GRAHAM: Certainly.

You’re referring to the Undertaking 30, I think it is.

MEMBER PEREIRA: That's right.

CHAIRPERSON GRAHAM: And if it’s not sufficient we reserve to ask for further undertakings. So, yes, we may have to come back on this.

DR. THOMPSON: Okay.

MEMBER PEREIRA: Okay. My next question --

DR. THOMPSON: Patsy Thompson.

Just to clarify. We will be providing the undertaking tomorrow.

MEMBER PEREIRA: That's right.

DR. THOMPSON: We will add some of the information that was discussed this afternoon, and if the panel judges that more information is required, we will provide it.

MEMBER PEREIRA: Thank you.

CHAIRPERSON GRAHAM: That's correct, Mr. Pereira.

MEMBER PEREIRA: Next one on page 35 of the intervention, there’s a recommendation that more definitive studies be done to clarify
possible links between some serious illnesses and the residential proximity to nuclear facilities.

That is your recommendation still, is it?

DR. FORMAN: Gideon Forman, through you, Mr. Chair.

Yes, Mr. Pereira, we certainly would warmly welcome more studies. As I said, I don't believe that we need to wait for that -- for the research to be done before we’re able to take a position as a physicians’ organization, but we would certainly welcome more research.

MEMBER PEREIRA: I turn to CNSC staff. Have you considered this recommendation, and what’s your position on the need to do a more definitive study? Is there a recommendation that you can make as a regulator on what needs to be done to better understand the relationship between proximity to -- residential proximity to nuclear facilities and impacts on illness of different types.

DR. THOMPSON: Patsy Thompson for the record.

We have considered recommendations such as these in -- in the past and we continue to review studies that are done internationally. In
terms of specifically looking at studies that are
done using proximity as a proxy, our position and
the position of most scientists in the area, is
that proximity is not a good surrogate for
exposure. And in our view the better studies are
those that have those measurements for individuals
that are part of the study. So we would continue
to do studies that are more ecological when there’s
-- for example, in new situations as an indication
of whether further studies need to be done.

In the case of the CNSC, we will
continue to do control studies where there’s
definition radiation exposure information so we can
have appropriate dose response relationships so
that when we see effects, they can be attributed to
radiation or other factors.

MEMBER PEREIRA: Thank you very
much and thank you, Mr. Chairman.

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

Now, we will proceed to questions
from other parties. OPG, do you have any questions
for Mr. Forman?

MR. SWEETNAM: Alberta Sweetnam.

No questions.
CHAIRPERSON GRAHAM: CNSC, do you have any questions for Mr. Forman?

DR. THOMPSON: Patsy Thompson. We have no questions.

CHAIRPERSON GRAHAM: Thank you very much.

Then government participants. There’s several government agencies in the room; I don’t see them. I think I have an indication that we have one intervenor from the floor or one that I know of right now. CELA, Ms. McClenaghan, you’re –

--- QUESTIONS BY THE INTERVENORS:

MS. McCLENAGHAN: Theresa McClenaghan. Thank you, Mr. Chairman.

It’s just a question with respect to the last exchange in terms of the usefulness of studies that use proximity as an indicator. And through you, Mr. Chairman, I believe Dr. Thompson was indicating that the preference is for studies with more definitive exposure information. But my concern is that residents in the area wouldn’t normally be carrying the kind of dose measurement that the workers carry and so that kind of study would be quite difficult to ever imagine doing.
And so I’d like some comment on why proximity is otherwise not a reasonable thing to at least provoke further investigation and questions.

CHAIRPERSON GRAHAM: Ms. Thompson, do you care to -- or Dr. Thompson, I mean to say, do you care to respond?

DR. THOMPSON: Patsy Thompson.

Perhaps to -- to clarify. The -- there’s been a number of studies using proximity as a proxy for exposure internationally. Very few of those studies have actually shown a relationship between cancer incidence and proximity to nuclear facilities. Many of those studies have been done in the UK by the French covering many sites in Europe and in the U.S., and the bulk of those studies have not shown a relationship between proximity to a nuclear facility and an increased risk of health effects.

So that’s why we’re saying that doing more of the studies that have essentially shown no relationship is probably not the better study to do. The studies that would provide more robust information as indicated for members of -- residents and communities, the exposure information is not readily available. However, a nuclear power
workers are exposed occupationally and generally live in the communities that -- where the nuclear facilities are located. And so we have those information for those individuals and we are able to track incidents of cancer and other diseases through time.

CHAIRPERSON GRAHAM: Ms. McClenaghan, are you --

MS. McCLENAGHAN: Mr. Chairman, I think perhaps the best way to leave this and as this is something we discussed with Commission counsel informally the other day, is that some of these undertakings we may have follow-up questions as participants in addition to, as you were noting as a panel you may have follow-up questions. And perhaps that will be the way to address it because obviously as the panel has heard, there’s contention about the strength of those studies and in particular issues like age of the exposed person, child or fetus or baby or young adult, is relevant compared to the worker studies as well.

Thank you.

CHAIRPERSON GRAHAM: Thank you for your comments. Anything further? Any further comment you have, Mr. Forman?
DR. FORMAN: Just by way of conclusion, Mr. Chair. Gideon Forman.

I would beg to differ with some of the comments I’ve heard from CNSC. I think that there is significant evidence showing a relationship between proximity to nuclear facilities and increased risk of leukemia. Certainly the KIKK study does indicate that. As the CNSC knows, the German study found children below the age of five that lived within five kilometres of a facility had 119 percent increased risk of leukemia. Children living within ten kilometres had a 33 percent increased risk of leukemia. British studies that followed up also found increased risks of leukemia for children living within five kilometres of a facility. So there is evidence out there. We welcome more robust evidence of course, but there is, at this very moment, quite a bit of evidence showing a connection between proximity to nuclear facilities and increased rate of cancers, particularly leukemia.

CHAIRPERSON GRAHAM: With that, thank you for your comments. Thank you for appearing before us today and providing us with...
your submission and your comments.

DR. FORMAN: Okay.

CHAIRPERSON GRAHAM: So the next we have is --

DR. FORMAN: Thank you very much.

CHAIRPERSON GRAHAM: -- is Mr. --

I'm going to -- yeah, is Mr. Shier, but before we do that, we're going to call a 15-minute recess and the chair will resume again at 3:00.

--- Upon recessing at 14:48 p.m.

--- Upon resuming at 15:02 p.m.

CHAIRPERSON GRAHAM: Good afternoon. Would everyone please take their seats.

Our next intervenor is the Canadian Nuclear Workers Council which has been presented under PMD 11-P1.153 and PMD 11-P1.153A and Mr. Shier is here representing the Nuclear Workers Council.

Mr. Shier, the floor is yours; welcome.

--- PRESENTATION BY MR. SHIER, MR. WIDMEYER, MS.

USHER AND MR. LEVITT:

MR. SHIER: Thank you and good afternoon, Mr. Chairperson and Members of the panel. As indicated, my name is David Shier. I'm
the president of the Canadian Nuclear Worker
Council.

And assisting me today, on my
immediate right, this is Jo-Anne Usher, one of our
CNWC executive members.

CNWC, for the record is our
acronym for the Canadian Nuclear Worker Council, it
make that a little quicker.

To my far right is Mr. Chris
Levitt; he’s from the United Steelworkers in the
Port Hope area and the nuclear fuels end of it.
And on my left Mr. Pat Widmeyer; is a business
manager of the International Brotherhood of
Boilermakers and naturally his union will be
involved with the construction of the -- of the
facility that we’re going to be discussing.

So first of all, just a few
comments about who we actually are. We are a
council of unions across Canada. The unions that
are involved in the nuclear industry from uranium
miners, researchers, to the people that operate the
power plants, the people that build the plants, the
researchers and so on and so forth, and basically
are -- the unions in Saskatchewan, Manitoba,
Ontario, Quebec and New Brunswick is the basic
areas that we have at this time.

The intent of the organization was formed about 18 years ago, was to ensure that the unions in the industry had a kind of a collective voice to kind of defend their jobs to the industry and their social responsibility to ensure that workers were putting their point of view forward in the nuclear debate. So we do a lot of work trying to educate people about the industry within labour and we also do a lot of public forums from time to time as well.

And we also participate in many panels like this; we’re regulars at the Canadian Nuclear Safety Commission and license hearings and other forms of EAs that the CNSC has done over the -- over the years.

Just a quick overview, we are naturally going to be kind of highlighting some of these. Some of them, we’re going to be quite quick on. They’re covered in our written submission. But we’ll cover our support, brief comments on emissions and human health, construction stage, our community perspective, the socio-economic effects, and then our -- our conclusions.

First of all, we are in full
support of the application put forward by OPG for
the new build and also support the CNSC and their
agreement that this project will have no
detrimental effects to the environment.

We believe that it’s good for the
environment, as we’ve heard. I’m sure you’ve heard
many times it is greenhouse gas emission free.

So by additional nuclear power,
it’s going to create more -- better effects for the
environment.

The economy, it’s going to be
great for the economy of Ontario, for this area,
and also we believe it’s going to be good for
Canada.

In the air, again, I think we just
touched that on the fact that nuclear power is
emission free.

Water, our perspective, again, is
that water is mainly used for cooling. In and out
-- sometimes it’s cleaner going out than it is
coming in.

And the public perspective, I’m
going to have a couple of my colleagues talk a
little more about that in a minute.

And workers and the public, the
public open houses, we’ll make a comment on them
that we had a lot of our members go to those public
hearings. The feedback we had that a lot of them —
a lot of people there were asking good questions,
getting some information.

But in this area, we don’t get a
high number of people going to the public hearings
or the public information sessions put on by OPG
because they seem to be non-stop. They always got
something going on in the area. So from our
perspective, that shows that there is public
support.

We suggest that some of the
opponents never show up at these things to get
their questions answered.

So our view of our straw studies,
if you want to call them that, is that there’s a
high support for the -- this project in the
community.

In the areas of wildlife, I won’t
say too much. We feel that -- we’ve been to
nuclear plants. And some plants around the world
encourage wildlife on their plants just to show how
safe they are, and it is quite common to see
different wildlife around the areas around nuclear
facilities.

For example, at our Bruce site, there were so many deer onsite there that they’ve become a safety hazard for the workers driving in and out. So it shows that they were not affected by the operation of a plant because they were quite healthy.

We believe that there’s no environmental impact.

There has been some suggestion to the construction stage may create some areas there. And I would like to pass it onto Mr. Pat Widmeyer, the business manager of the Brotherhood of Electrical Workers who will have a lot of staff onsite during the construction stage. Pat?

MR. WIDMEYER: Thank you.

Patrick Widmeyer, business representative, International Brotherhood of Boilermakers Local 128 for the record.

We represent a construction building trade union of approximately 1,800 shop and field construction workers actively engaged in the nuclear industry.

Our organization is a member of
both the Canadian Nuclear Workers’ Council and the Ontario Building Trades Council.

The International Brotherhood of Boilermakers support the proposed new build for the Darlington facility as both our shop and field members will directly benefit from the jobs generated as a result of this project.

New construction, by its very nature, is environmentally friendly; in that, radioactive waste products are not produced during the building process.

Our membership has extensive training and experience in human performance best practices for the nuclear industry gained from recent refurbishment projects.

The skills obtained in recent years will ensure that any new build project has highly-skilled and experienced trades people capable of delivering a project that maintains a commitment to the environment.

Moreover, the skills and experience of our organization ensure that a collective commitment to the best environmental standards of the nuclear industry are both maintained and improved upon during the life of the...
project.

It is our belief that Canada has
an opportunity to demonstrate that we can execute a
new-build project that leads the nuclear
construction industry in environmental practices
and standards.

Thank you.

MR. SHIER: Thank you, Pat.

I’d like to know pass to Jo-Anne,
which was indicated as a member of our executive
and also a local resident in the area here.

MS. USHER: Good afternoon.

My name is Jo-Anne Usher. I was
born and raised here at Durham Region and have
lived right here in Clarington for the past 25
years.

I have been employed by Ontario
Power Generation for more than 20 years.

As an executive member of the
Canadian Nuclear Workers’ Council representing
Pickering nuclear on the council; an executive
member of Women in Nuclear, Durham Region; a woman
in trades employed in a non-traditional job; a
resident in the vicinity; and an active steward for
the Power Workers’ Union, I appreciate the
opportunity to speak here today.

In the early stages of this EA, spring of 2009, OPG held many community information sessions to discuss the work that was progressing on the new nuclear at Darlington, environmental assessment, and explained the environmental studies that were ongoing about the project and how it would affect the region.

I, along with family and neighbours, attended those sessions.

I became involved with the Canadian Nuclear Workers’ Council to communicate and inform the public from a worker’s perspective my thoughts about working in the nuclear industry and its benefits.

I am also a member of the Durham Region Labour Council, which is another resource I use as a unionized worker to communicate and provide information to facilitate a better -- inform public about nuclear safety.

On a regular basis, I am asked questions about the project by neighbours, friends, and acquaintances.

From my experience, once people are more aware of the facts in regards to a nuclear
facility and get answers to their questions, they become supporters.

As a nuclear worker representative, I can assure you that the workers in the industry fully support this project, as most employees are very proud of their individual work accomplishments in producing safe, clean, reliable power for the citizens of this province.

I also believe climate change is the biggest threat to the environment, and nuclear does not contribute to this ongoing problem.

I have a vested interest in Durham Region, as my family, including children and grandchildren, live in close proximity to the Darlington nuclear site.

I also have a daughter who is a highly-trained and experienced nuclear employee. She supports the new build and sees the future potential that the industry offers in social and economic benefits.

I suggest, as well as my family and neighbours, that the high majority of the residents in Durham Region are in full support of this project and support the view that it will not create any detrimental effects to the environment.
Speaking on behalf of the CNWC,
we, therefore, fully support the new build at
Darlington.

Thank you.

MR. SHIER: Thank you, Jo-Anne.

And just moving a little further
east from the area here, I’d like to ask Chris
Levitt to give you a few words.

MR. LEVITT: Chairperson Graham
and committee members, my name is Chris Levitt.
I’m union president of USW Local 13173 out of Port
Hope, Ontario.

My employer is Cameco Corporation.

I’ve been there for 32 years, living in the
community as well as working.

And I’ve been union president now
for 11 years coming.

We’ve held in our community over
the past year four different forums as well as
they’ve surveyed the local community. And it’s
been found out that a large majority of residents
believe that our site does everything possible to
ensure public safety and are supportive of the
nuclear industry.

And we also believe that -- we’re
confident that all health safety policies, regulations will be followed if there is a new build in Darlington.

Thank you.

MR. SHIER: Thank you, Chris.

Dave Shier for the record.

In conclusion, we are fully supportive that this project will have no environmental effects. And as I indicated earlier, we believe it will improve the environment as an emission-free form of generation.

It’s good for the economy and good for Canada.

So we’d like to urge you to move forward as quick as possible to get the okay so the CNSC and move ahead and we can get a shovel in the ground and -- and start moving on the -- on this project. So thank you for your time. Before I conclude, I have one question, I -- if the Chair would allow. I would like to make one comment on the discussions for the last intervenor from our perspective of the health studies.

CHAIRPERSON GRAHAM: Yes, you can.

The floor is still yours.

MR. SHIER: Okay.
CHAIRPERSON GRAHAM: You can discuss --

MR. SHIER: Dave Shier for the record. Just listening to the -- the studies as our organization, as we indicated, we do speak to a lot of people and there’s continually different studies coming out all the time. What I’d like to do is just share with you kind of a practical perspective of looking at -- at the health studies.

We always say that if there’s anything unhealthy in the plant, it’s going to be the workers that are affected prior to affecting the local communities. And in the area with the -- in regards to doses and cancers and so on and so forth, a few -- late last year -- I guess I’ll have to put my other hat on, is that when you heard from the Power Workers Union, some of those committees they were talking about, I also work for the Power Workers Union. I sit on those committees. I sit on the policy committee and the working committee.

At the working committee level, we asked OPG, we wanted to know how many radiation-related Workers’ Compensation claims had gone in over the years from the nuclear sector, and I will
share that with you. There has been no claims gone forward for radiation-type diseases.

So that kind of a -- that, I guess, would be our study that the proof would be in the plants if there was an issue. As far as the offsprings of workers go, we have not heard of any -- any problems in that area and that the members that work in those plants are pretty forthright.

If there’s any issues, they are brought up through the health and safety committees and forwarded on to us.

So that would also add to our point that we feel that it is safe, and I know people don’t like to hear it, but I know of different studies and different groups that are -- say a little bit of radiation is good for you. So we haven’t supported that until they prove it to us, but there is some people with that -- with that belief, so I’ll share that with you.

Thank you again, and we’re prepared to answer any questions you may have.

CHAIRPERSON GRAHAM: Thank you, Mr. Shier. The process now, we’ll go to panel members, and Mr. Pereira, you have the floor first for questions.
--- QUESTIONS BY THE PANEL:

MEMBER PEREIRA: Thank you for your presentation. Given your -- the fact that your council represents unions right across the nuclear industry, do you have kind of an overview of what are the principal concerns of your members with respect to occupational health and safety issues that affect them in the workplace?

MR. SHIER: Dave Shier for the record. Most of our facilities are industrial establishments, and I don’t mind saying that the safety level, the bar is raised in the nuclear industry. We have -- especially with the regulator, we have higher levels of safety. There’s some real good examples.

For example, at one of our uranium mines in Saskatchewan has drove down their safety performance to better than office workers, which, from a mining perspective, that shows you that there’s -- there’s something that can be done.

The occupational health and safety issues, I mean, they’re a major thing. There’s slips, trips, and falls, but our safety performances are very high. We have some occupational diseases, for example, asbestos
because in some of the plants, some of the
domestic facilities, there’s asbestos insulation and issues
like that.

So generally speaking, it would be
the same as many other establishments that are in
heavy industry, but there’s been a lot of
improvements made over the years, and I think that
reflects in the safety performance of the plants.

MEMBER PEREIRA: Thank you. And I
-- I would infer from your previous comments that
radiation safety is not a dominant concern, or is
it?

MR. SHIER: Dave Shier for the
record. Radiation exposure, it actually is a -- is
a major hazard, but we feel we have the means in
place, the barriers in place to make sure that the
ALARA is practiced at -- and I think if you look
over the years, you’ll see that the actual -- the
yearly exposures have gone down, and people are
vigilant. They’re trained properly, and as was
mentioned in one of the other presentations, there
is a Joint Radiation Protection Committee, which we
have our leadership officials sit on. Also the
local joint health and safety committees, any
issues they can bring up as well, so -- plus it
means they get those things addressed, but it is a
hazard but it’s a managed hazard, and we feel the
barriers are in place.

MEMBER PEREIRA: Thank you. In
recent years in the nuclear industry, not only in
Canada but in other countries, there has been a
concern about safety culture and the attitudes that
everyone working in the industry should be
promoting to ensure that nuclear plants stay safe.

Does your council have any position on how safety
culture can be promoted among your members?

MR. SHIER: Dave Shier for the
record. We support the safety culture. Our belief
in that is that you have to have worker involvement
with that, and I think from the OPG perspective,
you’ll see the number of -- we have legislative
committees and then we have other committees that
are involved, and we believe that you have to have
the people doing the working involved in the safety
to improve the safety.

On the international perspective,
as one of the previous speakers indicated, the
Power Worker Union coordinates the International
Nuclear Worker Union Network, so we have lots of
contact with other unions across the world as well.
We know with our involvement with the IEA that they are pushing that, and we are starting to see more and more of that -- those effects across the globe.

A few years back, I was involved with a safety group where we went to the UK and did a benchmarking study on health and safety. We went to a couple nuclear plants, a couple coal plants, transmission distribution stations, and the nuclear plants were way ahead. You could see the safety culture was -- was enshrined in there.

So -- so we support it, and I think the stats support that as well, that the worker’s safety is a lot higher.

MEMBER PEREIRA: Thank you. And a final question. With the deliberations of this panel includes the decision on a license to prepare a site if the environmental assessment is approved.

In the construction sites, as you know, there’s quite often deadlines to be met and pressures in getting work done in the right sequence and so on. What are your views on control of hours of work and standards on the sites?

MR. SHIER: Dave Shier for the record. It’s a good question. We believe that the workforce is ready to take that on. It would be --
it’s a changing work environment when you get into a construction thing, but we find that -- I think if the proper procedures are involved and if workers are involved, that the safety will be still number one priority and that, you know, it will move ahead good.

There will be some bumps in the road, but safety will be put in place. For example, once you get a construction site, there will be a separate union of all the construction unions be involved and your own self and safety committee as well, so safety will be -- will be pushed by them. It will be -- it’s part of the business.

MEMBER PEREIRA: Thank you, Mr. Chairman.

CHAIRPERSON GRAHAM: Thank you, Mr. Pereira. Madame Beaudet.

MEMBER BEAUDET: Thank you, Mr. Chairman. I had a similar question on the -- with respect to the license to prepare a site to -- to see the safety on site for the preparation of the site and the construction. You mentioned in your written submission on page 4 that there has been no single radiation-related fatality among nuclear
workers. Did you get fatalities with respect to
other accidents during construction or site
preparation?

MR. SHIER: We -- Dave Shier for
the record. We have a -- sort of a lot of
construction going on now across the -- our nuclear
fleet when you look at refurbishments, and the
safety record there has been very good as well.
But I’ll maybe ask Pat Widmeyer if he wants to
comment on the construction side, for example, at
the Bruce site or any of the rehabs of Pickering
that they have done and his views moving forward.

MR. WIDMEYER: Pat Widmeyer for
the record. The -- the nuclear industry in general
is probably second to none as far as safety on a
construction site goes. Recently human performance
measures have been put in and we’ve started to
adopt those measures as well and that’s gone a long
way towards making sure that we can operate and
execute the job in a safe and effective manner.

MEMBER BEAUDET: I grew up in a
family that was in the oil industry, three
generations of oil industry. And as a child, I
remember, you know, this big poster. You know, of
one million hours without an incident. And, you
know, it was a disaster when you had to stop one hour. When, you know, something would happen. And I was trying to -- it’s important for us because it’s not just reading the written submission, but to get the feeling from the ground, from, you know, the workers. Where are the problems that you would face on-site?

I know on the television yesterday, they were saying for Quebec the accident rate has been reduced by -- from 137,000 a year to about 87 or something like that, which is a great improvement and most probably because the -- the protocols on-site have been reviewed and upgraded. And for you, I would like to know is there any area or any gaps, you know, in the forest of hazards that you have to face when you prepare a site or you construct that you would like to bring to us?

MR. WIDMEYER: Pat Widmeyer for the record. The -- I wouldn’t say there would be any major gaps at all. Obviously there is room for improvement in all processes that we use. We -- we certainly have an open and honest dialogue with the owner licencees and our member contractors that we work with on there,
so usually anything that -- any concerns that we
have can be dealt with on the shop floor for the
most part.

If it tends to escalate, then the
union representatives can get involved. By and
large, we managed to get those things resolved in a
fair and equitable manner and in an orderly manner
for that -- for that matter.

MR. SHIER: If I could just
comment on that? Dave Shier for the record. As
far as moving forward there, you would have the
Construction Unions. You would also have, as Ms.
McKin (ph) indicated, the Power Workers’ Union
would be involved there as the Operations’ Union.

And there would be requirements
for legislated Health and Safety Committee, so once
they -- things started, there would be committees
on the construction side and on the operation side,
so it would be a lot of involvement.

MEMBER BEAUDET: Thank you. My
second point refers to waste reduction. There are
some areas I believe where waste can be reduced,
but I would like to hear a bit more. I think OPG
in its documents says -- talks about incineration,
crushing, whatever. I would like to hear a little
bit more in terms of what you feel should be improved in that field?

MR. SHIER: Dave Shier for the record. Are you talking about radiation waste or waste overall?

MEMBER BEAUDET: Waste -- well, especially low and intermediate level waste.

MR. SHIER: Dave Shier for the record. I know being involved with the Joint Radiation Protection Committee, I know there’s programs in place to look at reductions in waste, and I think it has been reduced over the years. There is some training workers that -- to try and eliminate that waste to start with. I think the best example we have on trying to reduce waste and things is not giving Bruce Power a plug, but the idea of shipping the steam generators to Sweden to recycle. I think that makes as a very major issue around reducing and recycling waste.

MEMBER BEAUDET: Thank you. I would like to hear more from OPG. I believe you said there is a program now to wash, for instance, the clothes of the workers? Are there any other planned activities that you would like to bring
forward.

MS. SWAMI: Laurie Swami. I think it’s not close enough to me today. The programs that we have in place that are in existing facilities, a number of years ago, we used essentially disposable oversuits and clothing for workers.

And we have implemented over the years a number of improvements looking at the ability to reuse some of the equipment, so instead of just throwing it into the radioactive -- the low and intermediate level radioactive waste stream, we’ve looked at eliminating that to the extent possible, through rewashables. And that program has moved ahead significantly over the last number of years.

Another part of our program is to look at how we can segregate materials, so we have programs that look at segregation of waste that employees can do at the job site and that has also helped us to reduce the low and intermediate level waste generation.

In addition to that, we’ve looked at means to prevent materials coming into our facilities, so this would look at materials that
come in boxes and Styrofoam and containers that
dwhen it’s shipped to site for use.

We’ve looked at ways of
streamlining that, so that when it comes into our
facility, it doesn’t actually make it into a
radioactive area, so it doesn’t have to be declared
radioactive as a precautionary measure, so we have
now set up areas at Darlington where it can be
screened on incoming.

And we’ve set up screening areas
for its release, so that we have more material that
is not actually radioactive being diverted into
different waste streams to reduce the volumes, so
we have a lot of programs like that.

At our facilities, we also have
what we call the Green Teams, which is really
employee-based groups that -- that are there to
identify ways and means of making improvements, so
it’s not just the management team says, okay, now
we’re going to change to this launderable product.

We work through employees to bring
ideas forward to look at ways that they can be more
efficient and we can be more efficient in terms of
low and intermediate level waste, so I would say it
is something that, as a business, we’re all very
interested in making sure that we reduce that to the extent possible, aside from incineration and recycling programs where you remove small portions of radioactive material.

So I think that’s the emphasis that we have is bringing ideas up and implementing them across our business.

MEMBER BEAUDET: Thank you. Thank you, Mr. Chairman.

CHAIRPERSON GRAHAM: Thank you, Madam Beaudet. I just have one question and it’s regarding your slide on emissions and human health and talk about air, water, public perspective.

In your membership, there has been a lot of questions and a lot of discussion in the last few days at these hearings with regard to the method of cooling. Whether it’s once-through, whether it’s towers, what it might be and so on.

I would like to know, what is the impression of your membership who live in the area about the use of one-through -- once-through cooling and how it affects fish life and so on? Is there an opinion from your workers?

MR. SHIER: Dave Shier for the record. We realize that, you know, cooling towers
and different means of cooling are being looked at. We haven’t taken a real big position on it. I would suggest from a union perspective, it would probably be a bonus. We probably have more jobs if we go to cooling towers and the different types of ventilation systems compared to the once-through system, so that may create some interest, but generally speaking, we haven’t -- we’ve been kind of neutral on that.

CHAIRPERSON GRAHAM: No, it wasn’t the economic part of more jobs, but what my concern was or my question is, is there any feedback of fish impingement and the aspects of what once-through cooling does or is there any feedback with -- we heard one presenter one day say -- or more than once, we’ve heard if you have cooling towers, it’s not the people in the community that are going to be concerned as much as the people driving down the highway. They’re going to get an impression. Is there any feedback with regard to what your membership is saying with regard to the different types of cooling?

MS. USHER: Jo-Anne Usher for the record. Yes, when I went -- a lot of our membership went to the hearings, the open-houses
and whatnot because I recognize people there that
were there. And listening to the conversations
about cooling towers and the questions that were
asked of OPG, there was a real concern about
cooling towers.

They -- that a lot of them didn’t
want to see cooling towers. There was talk more
about the Canadian System that is in place now.
That’s what they still want to see, CANDU.

CHAIRPERSON GRAHAM: But with the
use of cooling towers, what was the reason they
didn’t want it -- they didn’t want anybody to know
there was a nuclear power plant or did they not
want the -- were they afraid of the plume? What
was the reasons?

MS. USHER: Jo-Anne Usher for the
record.

I only witnessed a few
conversations that happened. I think that could be
asked of OPG, specifically Laurie Swami, in regards
to at those meetings, what -- I mean, I heard
things about the ugliness of them, I heard things
about birds hitting them, but anymore than that, I
can’t honestly say.

CHAIRPERSON GRAHAM: No, that’s
fine. We’ve had a lot of discussion back and forth with OPG and so on, but I wanted to get your membership’s perspective and people live in the community, was it they didn’t want to admit there’s a nuclear power plant or was it the fact that you said birds hitting them or was there any concern that the fish are dying because of other things and so on, with regard to once-through cooling.

I just wanted to get a feedback of what your membership were saying with regard to all of the aspects that would make up this project if it’s approved.

MR. SHIER: Dave Shier for the record. Yeah, I’d say overall we haven’t really had a lot of feedback. Joanne provided some there, so as a union -- council unions we haven’t looked at it 100 percent. We know cooling towers and things moving out of Ontario, we did a lot of work a few years back in Alberta and Saskatchewan regarding the potential new builds there, and cooling towers, and water was a very big issue out there because of their rivers, and if there was a plant put out there they would need some type of cooling towers, versus Ontario where we have the -- have the great lakes. So I’ve heard more from out
west than I have from Ontario.

CHAIRPERSON GRAHAM: Thank you very much, Mr. Shrier -- Shier, I mean to say. Now, we have nothing more from my panel colleagues. We’ll go to open the floor, to the various other people that participate in these hearings, and I’ll first go to OPG. Do you have any questions, Mr. Shier?

MR. SWEETNAM: Albert Sweetnam, no questions.

CHAIRPERSON GRAHAM: Thank you, Mr. Sweetnam. CNSC, Dr. Thompson?

DR. THOMPSON: Patsy Thompson, we have no questions, thank you.

CHAIRPERSON GRAHAM: Next on the agenda for questions is generally from government organizations, like Environment Canada and so on, that might be here for questions. If not, then we will go to intervenors, and we don’t have any intervenors registered. So, Mr. Shier, thank you very much for presenting today. Thank you very much for coming and giving us the views of your membership.

The next on the agenda this afternoon -- into -- I’ll move to the next
intervenor, which is Mr. Tom Lawson. And Mr. Lawson’s intervention is a submission under PMD 11-P1.218. And, Mr. Lawson, we invite you up and welcome you here today to give us your presentation. And I don't think you have overheads, so if you’d just use the mic and proceed at your pleasure. Thank you very much.

--- PRESENTATION BY MR. LAWSON:

MR. LAWSON: You can hear me okay?

My name is Tom Lawson. I’m a lifelong resident of Port Hope. My wife and I have lived in the shadow of the nuclear industry for half a century. We’ve been deeply involved in nuclear issues for many years, and we’ve made presentations at hearings on nuclear issues in Pickering, Toronto, Oshawa, Ottawa, Deep River.

Before I start I’d like to thank you for including me and to tell you how amazed I am at the courtesy and acronymity with you people. I’ve tried to absorb this flood of conflicting evidence.

I want to be a little different from the concerns that you’ve heard to date from the type of evidence you’ve been listening to. Our concern is not in the details of this game. In
fact we feel that it must be difficult not to lose
sight of the woods for the trees, since there are
so many of them. We’re rather concerned about the
suicidal direction our industrial civilization is
taking, and the leading role the nuclear industry
plays in that direction. The Darlington rebuild
plan is a very significant part of the problem.

I should say before presenting, I
am no expert in technology, but I am an experienced
student of language, and I’m reminded very much,
particularly of the Seaborn Hearings in ’98, where
I felt very much the same as I have been feeling
these last few days.

I’ve been struck again by the
quite extraordinary contrast in the use of
language. It seems to me that there is a very -- I
don’t know whether you’re capable of seeing it, but
there’s a very strong contrast between objectivity
on one side and quite extraordinary subjectivity on
the other side. I have listened to endless
phrasings that are what I call highly subjective
terms. And I don’t feel they are highly
acceptable.

When I hear very, very low, a few,
quite low, will bring, reduce leaking, sees no
affects, a number, more robust, workers are
healthier, very slowly, very effective, these
phrases I’ve listened to for the last few days, and
I call that a kind of language bafflegab. To me it
is fuzzifying. It sounds -- if you’re not
listening carefully, it sounds very compelling, but
if you think very hard about what is being said,
very often it doesn’t say anything.

I don’t want to belabour the
claims that the nuclear industry has made over all
these years about being cheap, clean, safe,
efficient. You’ve been hearing more of it all the
time. I would just summarize the cheap side of it
by saying it has never paid for itself. We
taxpayers are still paying every month for the
multibillion-dollar debt that nuclear ran up in the
‘90s. It’s eating away at the very funds we need
to develop relatively clean green technologies, but
even that isn’t the basis of the problem.

I would suggest that -- I would
ask, is there a person in this room who has ever
done something to actually make the world a better
place? Make mother earth healthier by, in any way,
changing the basic way we’re living, which to me is
a standard of living that is not just
unsustainable, it is obscene.

Is the nuclear industry clean?

Now, that’s been one of the big claims. Well, all about the emissions. The emissions are not the same, of course, as the emissions from the fossils, you can’t smell, taste or feel them, but they are, in our humble opinion, more insidious and more lethal in the long run. From the mining, to transportation, building of facilities, decommissioning, dismantling, and above all, the waste.

Above all, the waste. The industry has been a major polluter. Unlike the fossils its waste will -- and I’m not using the word as exaggeration, will never go away, never. There’ll remain a major health threat wherever nuclear energy is produced, or wherever it has been produced, they’ll still be there. There will be cushy jobs for people involved in the nuclear industry, just monitoring what we’ve already done, for the rest of civilization.

It has banked, like the -- as big tobacco tried to, on the difficulty of proof. Its so-called health studies, and I’ve studied many of them, especially in Port Hope, have, with all due
respect, been inconclusive by design. And its response to whistle-blowers has been to shoot the messenger rather than to address the source of the contamination.

We’ve listened to endless estimates about how nuclear waste will be managed, moved about and entered in pools, to cement towers, to repositories, hoping for retrievability and so on.

And I’ve noticed too a strange thing, after the Crazy Caverns Crisis in Port Hope in ’95, the word disposal disappeared and the word management came in. And I must say I note that it is central to your use of language, but I heard the word these past days slipping in again. Well, surely we all know, since Einstein, that there is no such thing as disposal. Nothing in creation can be permanently isolated from everything else, ever.

And one of the saddest things about the deep rock disposal -- the deep rock containment or whatever you want to call it, the geological repositories, is that we -- there is down there, where they intend to put this stuff, that area is teeming with life that we know very little about. We think of it as a dead zone. In
fact, with all due respect, I believe that it’s almost impossible in the society we live in, to think of the earth as other than a resource to be exploited for our benefit to give us more economic growth as if that’s going to save us. And more and more of us are seeing that economic growth has become a massive cancer that is eating away at the heart of our industrial civilization, and that makes me very sad.

The safety thing, I’ll just quickly refer to the fact that there isn’t an ounce of radioactive materials that we have produced that cannot be used for the military. Every bit of it is potentially able to be used and most of it -- virtually all of it, for the first while, was used for military purposes, but we keep talking about peaceful purposes. Sorry, there’s no guarantee and never will be of that.

Disasters do happen. Of course, Japan is the latest one, but I think we need to ask ourselves what were the Japanese saying about the likelihood of this before it happened? I think we need to honestly ask, what were they saying? And why is it that we always assume, well, it always happens to other people; it’s never going to happen
to us. It couldn’t possibly happen here. I beg to
differ.

I see the -- a moral question
really involved, particularly when I see the
decision making that has been -- had to be made by
the Safety Commission over all these years, by the
regulator, that the only actual case I know of
where the boom was lowered on the industry, was the
isotope crisis. And within a week or two, the
Prime Minister had fired its chair. I wasn’t
surprised, but I was saddened by that fact.
The CNSC and Health Canada are
both subservient to this minority government which
is pro-nuclear. And in my humble opinion,
dedicated not to the health and safety of the
people, but to the health and safety of the
industry. Both depend upon ignorance amongst the
general public to maintain their influence.

So finally I see us in a situation
that the -- our Native leaders brought to my mind
again when they were speaking. They don’t talk the
way we talk. They don’t think the way we think.
I’ve just come back from a week in Hay River up at
Great Slave Lake where Dené leaders, the Elders,
were speaking to about 70 young people who were up
there with us for a week. And the way they spoke
about -- they didn’t talk about God or Jesus or
that sort of thing. It was the Creator, creation,
the sky, the land, that everything to those people
is sacred; everything matters. There’s no such
ingoing as an object. Everything has a right to its
own life; its own dignity; its own purpose. And
that’s deep in their -- so I wasn’t surprised to
hear them saying, we don’t oppose this. That’s not
their way of doing things; their whole government.
And their justice system up there is based upon
reaching consensus instead of butting heads all the
time. I think we have a great deal to learn from
these people. They -- and if you want a source of
some of it, read John Ralston Saul’s book, A Fair
Country. It makes a compelling case for the fact
that Canadians are Canadians and not Americans or
British or French. That’s our roots really because
of our indigenous people.

And what do I see about Darlington
into this thing? And what I essentially see is
this, and this is what I’ll conclude with, that --
how can I put this best? We are treating mother
earth as an -- and I -- I include myself. We’re
all doing it -- as a resource to be exploited for
our short-term benefit for a so-called better life
for us when our standard of living is already
obscenely unsustainable.

I see people such as -- I think of
people such as Ghandi when he was asked, what do
you think of civilization? And his answer was, oh,
that would be a good idea. And of an Ethiopian
Elder -- an old woman who was asked, what do you
think of industrial civilization? And she said, it
is very young; it won’t last.

I think of the astronauts and the
way so many of them had their whole outlook on life
suddenly changed when they got out there and looked
back at the earth and were -- and had a Paul on the
road to Damascus conversion, when one of them says,
I -- to pollute the earth is to spit in the face of
God. That’s -- that’s a technocrat engineer
talking. And I could name you many of them who
talk in that same way since they’ve been up there.

I think if any of us could go up
there, we would have an immediate conversion in the
way we think about everything. And we wouldn’t be
caught on these long, interminably dragged out
butttings of heads over what are specific issues
associated with the real problem. My own belief is
that -- that when that astronaut said to pollute
the earth is to spit in the face of God, I can’t
help feeling that what we have planned for
Darlington is to spit in the face of God or as our
Native people would say, in the face of the
Creator. Thank you for your attention.

CHAIRPERSON GRAHAM: Well, thank
you very much, Mr. Lawson, for your presentation
today. We’ll now go into questions from my
colleagues and I’ll start off with Madam Beaudet.

--- QUESTIONS BY THE PANEL:

MEMBER BEAUDET: Thank you, Mr.
Chairman. You’ve heard by a previous presenters --
well, one in particular I’m referring to, is the --
sorry, the Canadian Association of Physicians for
the Environment. And rightly so, you say that
there are different views and completely
contradicting each other in terms of health studies
and results. And you say that, for you, you
consider the health studies have been inconclusive
by design and I’d like you to expand more on that
please.

MR. LAWSON: Can you hear me? Oh,
yeah. Over and over again, we have seen these
studies saying, well, Port Hope is too small a
community. We have to have a big enough one to make sense. So we have to go down to Trenton or up to Oshawa or so on, to make it work instead of looking closely at the people in our town who have lived for 60 years with exposure.

I should say in adding that I know a good many people who have been hurt, but you can’t prove it. You can’t prove it, but we have no doubt where it came from. And I -- let me think of the best way to put this. My wife, and this is typical, my wife and a group of friends spent a great deal of trouble agonizing and a lot of time, raising ten to $12,000. It was a huge job for them to do.

They got it, and they got 10 of us or -- 10 or so of us tested, not studies of levels of exposures, but their urine studied.

We found you couldn’t do it in Canada because the government had closed the labs. They do that.

And I think you should look into the reason why those labs were closed.

We had to go to Germany, to one of the top world places to do it.

And it was done and back came very
disturbing results.

There was stuff found in all of their bodies that should not have been there and couldn’t have come from anywhere else but the nuclear industry.

And they did that as a pilot study, wanting to see it used as a pilot on which a full-scale study of the people who live in and have lived in Port Hope to clear the air once and for all in case this didn’t hold water.

And what was the reaction? They were lambasted as ruining the town’s image.

The -- the lab itself was accused of not having peer studies, this, that, and the other, when it’s one of the world’s top labs.

It was a massive outcry about -- you’re trying to ruin our town. It’s shoot the messenger every time.

And I’ve lived through these over and over again.

We did win in ’95 when we spent a year, agonizing year, fighting the 19 huge caverns they wanted build right under our waterfront to store a million tonnes of radioactive toxic waste.

And it took us until the last
minute to realize, my God, we won.

But we had to get about 90 percent of the population of the town to be ready to vote no in the referendum.

Thank God we had a referendum.

And they were -- when it was obvious that it was going to happen, the town pulled out of negotiations for compensation, and the whole thing collapsed.

And it -- we were assured right up until the last minute you’re wasting your breath.

It’s going to happen.

So we have had some -- some -- we don’t always lose, but we’ve had some pretty bitter experience.

We sent in over 100 -- there were over 100 submissions over slightly-enriched uranium to be produced right on our waterfront.

And 100 -- we can’t have that stuff come out in the open in a -- in a full-panel review or something.

So what do they do? Pulled out their request for a licence and simply bought out his architect and proceeded to do it over there.

So it’s -- it -- there’s always
ways around it.

My view is, what are we doing up in the Bruce now? Not 19 caverns, each the size of a 12-storey apartment building, but 38 is the plan now. They haven’t learned a thing.

So from my point of view, it’s a long hard battle, but it is one we are committed to.

And when I get approached by a member of town council who says, if you don’t like it in this town, why don’t you leave, my answer is that my place, the town I’ve loved all my life, I consider it in trouble, and you’re telling me to run away. Is that good citizenship?

So you can understand where I’m coming from.

MEMBER BEAUDET: Thank you.

No more questions, Mr. Chairman.

CHAIRPERSON GRAHAM: Thank you, Madam Beaudet.

Mr. Pereira?

MEMBER PEREIRA: Thank you, Mr. Chairman.

Mr. Lawson, in your submission, you have -- the sentence says, With the advent of
climate disruption, nuclear facilities on our major waterways become more and more vulnerable. Darlington is a prime case of this. What exactly do you mean by that? MR. LAWSON: I mean that the notion that an earthquake here or over -- the other side of the lake could not happen and could not do what happened to the -- in Japan is daydreaming. Of course it can happen. And anything that can happen eventually is going to happen, eventually, maybe next year, maybe 100 years from now, but it’s going to happen. And this is what all my study of history has taught me, that you -- you cannot pretend that Darlington is a safe place to do this on the -- on the greatest fresh water resource this part of the world has. It’s -- to my way of thinking, it is sacrilegious to do this.

MEMBER PEREIRA: Thank you for that comment. And in the environmental impact statement, Ontario Power Generation has looked at the risk of earthquakes and the risk of tsunamis and so on, so they’ve tried to address that.
I’d like to go onto another pretty strong statement you make in your submission, and you repeated it, and you say, The CNSC and Health Canada, both subservient to this minority government, have always been dedicated to protection, not of the people and the environment, but of the industry.

Both depend on ignorance among the general public to maintain their influence.

MR. LAWSON: Yeah.

MEMBER PEREIRA: And you -- you talked earlier about people who choose their words carefully --

MR. LAWSON: Yeah, that’s --

MEMBER PEREIRA: -- to gloss over issues, but --

MR. LAWSON: Quite confrontational, isn’t it?

MEMBER PEREIRA: But you’re not glossing over issues here.

MR. LAWSON: Yeah, I’m not practicing what I preach.

MEMBER PEREIRA: You’re making a strong statement.

MR. LAWSON: Well, I am, by
nature, a -- what’s the word? Unlike my wife, I’m
-- I am, unfortunately, a little more -- tend to
get people’s backs up where she doesn’t.

MEMBER PEREIRA: Well, that’s a
very strong statement, which we in this panel, if
we just left it at that, would not be -- be fair to
the CNSC to give them a chance to respond to that
strong statement saying that they’re here to
protect the industry and not the people and the
environment.

CNSC, do you want -- wish to
comment on that?

DR. THOMPSON: Patsy Thompson for
the record.

What I would say is that the
Atomic Energy Control Board and the CNSC have
existed for close to 65 years.

The Nuclear Safety and Control Act
is quite clear, and the mandate the CNSC has is
quite clear that we exist solely to make sure that
the industry is regulated appropriately and that
health and safety of people and the environment are
protected.

MEMBER PEREIRA: Can I ask you,
CNSC, another question?
There’s one example in this presentation about a time when the CNSC took strong regulatory action to curtail activities in the nuclear industry.

Do you have other examples of when, over the years, AECB and CNSC, action was taken to stop activities in the nuclear industry in the interest of protecting health, safety, and the environment?

MR. HOWDEN: Hello. Barclay Howden speaking.

Yeah. The CNSC has a compliance program, and part of the compliance program, there’s an inspection part of it, but there’s also an enforcement part of it.

And I think people don’t always see the enforcement part of it because a lot of it is done by way of explaining to licensees the things that they need to do or providing clarity for them, such they can come into compliance.

And our licensees are quite responsive, and so they try to avert enforcement actions.

But three examples that we have from different industries are the CNSC did shut
down the construction of the tailings management facility at the MacLean Lake back in the late 1990s as the construction methods weren’t up to par. So this set back the proponent for quite a period of time until they could take corrective action.

That was done through the -- a warning that an order would be issued against them, and they voluntarily shut the site down.

Another one is within the nuclear power plant is the de-rating of units due to nuclear neutron overpower protection.

This is an aging feature, and so in order to stay within their safely limits, stations have had to de-rate.

The impact on that -- it was done for safety, but they certainly -- the impact on them was on production.

Currently, the Canadian Nuclear Safety Commission has an order in place against the Government of Saskatchewan. So this is directly against a government for issues up at the Gunner site, which is a Legacy mine, and that order remains in place at this moment in time.

Thank you.

MEMBER PEREIRA: Thank you.
One further question to the CNSC.

In Canada, you’re the nuclear regulator.

Has your -- the CNSC been subject to audit in Canada by independent organizations and perhaps again peers in the international community?

MR. HOWDEN: Barclay Howden speaking.

Yes. As part of the --

CHAIRPERSON GRAHAM: Mr. Lawson, maybe turn your mic off --

MR. LAWSON: Oh, I’m sorry.

CHAIRPERSON GRAHAM: -- while he’s speaking because it rings.

MR. HOWDEN: Yes. As part of being an independent agency, we are subject to external audit.

From a government standpoint, the Office of the Auditor General has audited against us two times in the past seven years, and we have responded to those findings.

Additionally, in 2009, the CNSC underwent an integrated regulatory review service review. This is a service that was provided by -- organized by the International Atomic Energy
Agency. The CNSC underwent and integrated regulatory review service review. This is a service that was provided by -- organized by the International Atomic Energy Agency where there was 20 international regulators from 13 countries came in to assess the CNSC regulatory system. And there was -- from that, there was findings of 19 good practices, 14 suggestions -- or 14 recommendations and 18 suggestions.

Overall, they concluded that we had a robust regulatory system; however, in the -- from the view of continuous improvement, they provided a number of suggestions in which the CNSC could improve. The -- that report is on the CNSC website and the IEA website as well as the CNSC’s management response to that.

We also tracked the -- the actions that we’ve taken to address those -- those particular issues. Thank you.

MEMBER PEREIRA: Thank you, Mr. Chairman.

CHAIRPERSON GRAHAM: Thank you. I have one question, and that’s to CNSC, Mr. Howden. In the 1990s, several or a number of nuclear reactors were shut down at at least two OPG sites,
Bruce and at Pickering. Did AECL -- not AECL, AECB, I should say, did they play a role in that at the time, or was that a voluntary move by OPG at the time, which was not called -- it was -- there was another name for the power commission at that time, but what role did you -- the reason I’m asking the question is, what role do you play in if a reactor is not operating to the -- to the -- to your requirements do you have in shutting them down?

MR. HOWDEN: Barclay Howden speaking. Those shut downs of those units were done following a detailed review by Ontario Hydro at that time. The AECB at the time concurred with that -- those shut downs due to issues that had been -- come up.

What happens when the units are shut down like that, they are still retained under the regulatory control of the -- at the time it was the AECB, so the licenses that were in place, and they were maintained in that state until such time that the operator decided to refurbish the units to bring them up towards modern standards and bring them back on to line.

That was all done under AECB and
then CNSC regulatory oversight.

CHAIRPERSON GRAHAM: So that safeguard -- that safeguard is still there. Is that what you’re saying?

MR. HOWDEN: Barclay Howden. That is correct.

MR. LAWSON: Could I make a statement?

CHAIRPERSON GRAHAM: Yes.

MR. LAWSON: Am I mistaken that a matter of days before the roof caved in in 1997 and all those reactors had to be closed, they -- I believe I’m right in saying that they had the stamp of approval from the regulator within days before that happened, as if they hadn’t seen at all what was coming?

CHAIRPERSON GRAHAM: Mr. Howden.

MR. HOWDEN: Yeah, Barclay Howden speaking. At that time, Pickering A was under a six-month license due to issues that were occurring at that particular facility, and the commission -- or the Board at the time decided to give a very short period of time such that Ontario Hydro would take actions to rectify the issues that had been identified.
CHAIRPERSON GRAHAM: Thank you.

The procedure we have now, if there’s no other questions from my colleagues, we’ll go to OPG. Do you have any questions to Mr. Lawson?

MR. SWEETNAM: Albert Sweetnam.

No questions.

CHAIRPERSON GRAHAM: CNSC, do you have any further questions?

DR. THOMPSON: Patsy Thompson. No questions, thank you.

CHAIRPERSON GRAHAM: Government agencies, Environment Canada are generally here or any other agencies that have a question of Mr. Lawson? If not, are there any intervenors? I have indication that there are no intervenors from the floor, so, Mr. Lawson, thank you very much for your presentation today. Thank you for coming, and a safe trip back to Port Hope.

MR. LAWSON: Thank you, sir.

CHAIRPERSON GRAHAM: With that, we are going to -- the floor will now go into some written submissions that we received, and I will ask my Co-manager, Ms. McGee, to present these in a manner that panel members and only panel members will have questions on them. Thank you very much.
--- WRITTEN SUBMISSIONS AND COMMENTS BY THE PANEL:

MS. MCGEE: Thank you, Mr. Chair.

The Joint Review Panel, as the Chair noted, will now move to the consideration of some of the written submissions received. I will identify the writer and the PMD number for each submission, and the panel members will then have an opportunity to ask questions.

PMD 11-P1.26 from Angela Palledino, PMD 11-P1.27 from Mitch Backx, PMD 11-P1.28 from Gary Hauser, PMD 11-P1.29 from Kerry Turcotte, PMD 11-P1.30 from Tahir Iqbal, PMD 11-P1.31 from Tim Fry, PMD 11-P1.34 from Brian Beare, PMD 11-P1.38 from Mike Schleiffer, PMD 11-P1.44 from Hugh Gillies, PMD 11-P1.51 from Joy Vaneyk, PMD 11-P1.53 from Muhammed Saleem, PMD 11-P1.64 from Khalid Malik, PMD 11-P1.95 from Kirk Clark, PMD 11-P1.112 from Mary Chi, PMD 11-P1.176 from Yatin Nayak, PMD 11-P1.181 from Sean McConnell, and PMD 11-P1.240 from Siamak Nikzadeh.

These are all similar written submissions and now open for the panel if there are questions.

- CHAIRPERSON GRAHAM: Thank you,
Kelly. Questions from the floor. As the co-
manager mentioned, the theme is all very similar,
and that’s why they were read as a group, because
of the theme and because of their comments, but on
any or one of these comments, panel members, any
questions, and I’ll go to Mr. Pereira first.

MEMBER PEREIRA: Thank you, Mr.
Chairman. Indeed, these written submissions are
all very similar. They all support the continued
commitment to the project proposed by Ontario Power
Generation. Many of them are residents of the
Durham region. Some are employees of Ontario Power
Generation, and some do commend Ontario Power
Generation for safe and reliable operation of the
nuclear power plants currently at Pickering and
Darlington, and they express confidence in the
ability of Ontario Power Generation to operate the
new plant safely.

But to summarize it all, they all
support commitment to the project. I have no
questions on these submissions.

CHAIRPERSON GRAHAM: Thank you
very much, Mr. Pereira. Madame Beaudet.

MEMBER BEAUDET: I agree with my
colleague’s comments here. They also raise support
for nuclear power in Ontario in as part of the overall energy mix for different reasons where the base load replacement of Pickering being pro Candu and also transmission lines already existing and contributing to reduced costs, so I have no further questions because I believe most of these subjects have been addressed.

However, with respect to commending OPG having a strong operating record, I’d like to make a correction on something I said yesterday with respect to the Assisted Ability Report Review, and I think it is fair that, as I mentioned, you do have still a ranking between one and three which represents a high achievement. However, I mixed up the years saying that you were doing less and you’re doing better.

The questions I had with respect to fatigue and prepping up the team to always perform 105 percent, I believe this question had some meaning, and I -- I agree with the answer you gave us. Thank you.

(SHORT PAUSE)

CHAIRPERSON GRAHAM: Thank you, Madame Beaudet. Were you -- I’m sorry, you weren’t looking for a question -- or an answer? No. Okay,
thank you. We’ll go on to some other written
submission that carry -- that carry some various
themes, and, Kelly, you’ll start off with I think
it’s number 58.

MS. MCGEE: Thank you, Mr. Chair.
The next submissions for the panel’s consideration,
PMD 11-P1.58 from Cutler & Associates Inc.,
PMD11-P1.65 from Dwayne Ellis, and PMD11-P1.119
from Danielle Cote.

CHAIRPERSON GRAHAM: Questions
from the floor for any one of these or any group of
these.

Madam Beaudet?

MEMBER BEAUDET: I believe these
submissions, Mr. Chairman, cover exposure to
radiation for workers and radiation to the public
with different views, like we’ve expressed earlier,
whether radiation is good or bad.

And I think we will probably have
more questions, but at this moment, I think we have
to wait for CNSC briefing on all the studies that
have been done.

And so for these three
submissions, I have no questions at the moment.

CHAIRPERSON GRAHAM: Mr. Pereira?
MEMBER PEREIRA: Thank you, Mr. Chairman.

I too have very little on these three PMDs.

Just to note that one of them there’s talk about nuclear generation as having a very low environmental footprint compared to fossil-based approaches to power generation.

And the first one, PMD11-P1.58, is the one that I was referring to earlier which talks about the beneficial effects of low doses of radiation. And this is part of the spectrum of alleged results from radiation.

And we’ll look to the briefing from the CNSC to be enlightened on what the debate -- where the debate is taking us.

Thank you.

CHAIRPERSON GRAHAM: Thank you, Mr. Pereira.

And I also wanted to note that in that recommendation -- and there was a recommendation with regard to the implementation of a good communications plan about radiation, providing information to the public, which is in those -- one of those three recommendations were
made.

So I also just wanted to note that.

Now we will go onto the next group that my co-manager will start off, and it’s starting off with 131, Mr. Gitte. 16:18:15.

MS. McGEE: Thank you, Mr. Chair.

The next group of written submissions for the panel members’ consideration, PMD11-P1.131 from Marcel Gitte, PMD11-P1.144 from Tom Mayberry, PMD11-P1.150 from Jim Penna, and PMD11-P1.190 from David Huntley.

Thank you.

CHAIRPERSON GRAHAM: Questions from panel members.

Mr. Pereira?

MEMBER PEREIRA: Thank you, Mr. Chairman.

Pour PMD1.131 de Marcel Gitte, je n’ai pas de commentaires.

The submission from Tom Mayberry, this intervenor does raise some concerns about the approach to sustainable development and a concern that what we have in the environmental impact statement is not a comprehensive assessment for
sustainable development.

This is a topic that we did -- the panel did raise yesterday, and so it’s identifying the same concern.

He also raises the question of the precautionary principle being an important consideration.

And, yes, this panel will, in this report, be looking at how the precautionary principle can be applied in arriving at recommendations.

He questions the Ontario Energy policy and strategy. And this is an issue which we discussed with the Deputy Minister of Energy from Ontario.

And he questions -- the intervenor questions the issues about worker health and safety in a nuclear industry.

And, again, this is the subject of one of the undertakings that CNSC staff will be providing us.

So, in my view, this intervenor has raised a number of important issues, all of which are already -- have already been raised and/or discussed in our -- in our hearings so far,
and we -- which we will be considering further.

The next two interventions are about the hazards that arise from uranium mining from waste from tailings management and other wastes. So one is on uranium mine predominantly and uranium mining.

And, again, these are issues that we -- that have been raised by other intervenors before.

I have no further comments.

CHAIRPERSON GRAHAM: Madam Beaudet?

MEMBER BEAUDET: I agree with Mr. Pereira’s comment.

There’s one point that I’d like to bring with Mr. Gitte.

C’est regrettable que c’est une soumission par écrit seulement parce qu’il a quand même passé qui aurait pu être intéressant d’examiner puisqu’il est une accidenté du nucléaire.

Mais je crois qu’avec les informations de notre personnel, nous avons été mis au courant exactement de la situation qui concerne Mr. Gitte puisqu’il est déjà apparu devant d’autres commissions, la Commission de sûreté nucléaire du
Concernant -- following the other presentation -- in relation to the other presentation, the submission especially of Mr. Penna, which is PMD1.150, he expresses a view that has been brought already in front of us about the full cycle or the cumulative impact of the entire nuclear chain.

And I’d like to note that quite a few of the written submissions have brought this concern in front of us.

And for Mr. David Huntley, he doesn’t state a firm position whether he is against or not, but is bringing up normal and radiological risk factors for the nuclear energy -- nuclear, yes, energy, which -- elements that we have covered, I believe, so far, especially today.

So I have no further question on these submissions, Mr. Chairman.

CHAIRPERSON GRAHAM: Thank you very much, Madam Beaudet, and both you and Mr. Pereira, I think, have summarized those interventions very well, and I concur with those remarks.

With that, it’s -- I will now
declare that the afternoon agenda is complete and
that tonight we’ll resume at 7:00 in the -- at the
same place.

And we will start with the group
from Port Hope and their presentation.

So with that, I -- it’s Port
Hope Community Health Concerns Committee. So
that’s what we’ll start with.

So I now declare the meeting
adjourned until this evening at 7 p.m.

Thank you very much, everyone, for
participating today.

--- Upon adjourning at 4:23 p.m.
--- Upon resuming at 7:01 p.m.

MS. MYLES: Good evening everyone,
my name is Debra Myles, I’m the panel co-manager.
Welcome back to today’s public hearing session for
the Darlington New Nuclear Power Plant Project
Joint Review Panel.

Panel Secretariat staff are
available at the back of the room. Please speak to
Julie Bouchard if you are scheduled to make a
presentation at this session. If you want the
permission of the Chair to put a question to a
presenter or if you were not previously registered,
but wish to speak now. Opportunities for questions
or to make a brief oral statement are subject to
the availability of time.

As a courtesy to everyone in the
room, please silence your electronic devices. This
afternoon’s agenda will begin with the Port Hope
Community Health Concerns Committee and that’s
under PMD 11-P1.243. Thank you.

CHAIRPERSON GRAHAM: Thank you
very much, Debra. And good evening, ladies and
gentlemen. First on the agenda tonight as
indicated by my co-manager, is Faye Moore and Ms.
Lawson is with her and good evening to both of you.
Ms. Moore, the floor is yours.

--- PRESENTATION BY MS. MOORE AND MS. LAWSON:

MS. MOORE: Good evening, Member
Graham, members of the panel, ladies and gentlemen.
My name is Fay Moore. I’m the chair of the Port
Hope Community Health Concerns Committee and
accompanying me this evening is my colleague and
board member, Patricia Lawson.

We are residents of Port Hope, a
community of approximately 17,000 people that is
about 40 kilometres east of here on Lake Ontario.
It’s about 60 kilometres east of the Pickering

INTERNATIONAL REPORTING INC.
plant -- in Pickering, the nuclear plants there.

Our community has been hosting two nuclear facilities for many years, starting from the 1940s when Eldorado Nuclear operated a uranium refinery. Before that, it was -- it produced radium; it’s now -- it also did metals production, including depleted uranium research and it’s now processing uranium dioxide and uranium hexafluoride and also operates a fuel fabricator.

We have lived as a community with a legacy of emissions and radioactive wastes for which a screening level environmental assessment is currently underway. Our committee formed in 1995 in an effort to push the federal government to do the comprehensive health studies that were promised to the community in 1979 when contamination throughout the community became well-known and publicized. We have had a lengthy history of connection with the Atomic Energy Control Board and the Canadian Nuclear Safety Commission and I can assure you it has been a difficult journey.

The studies that were promised at the time in 1979 dollars were $5 million, and this was to follow up on people who lived in contaminated properties who were specifically
exposed to radioactive material and to do longitudinal studies. Most of those have never been done.

I’ll start with the bottom line which is that our committee does not support construction of a new reactor at Darlington or expansion of the nuclear industry anywhere for reasons for health and safety, unacceptable risks, lack of a legal and medical framework that properly recognizes the dangerous and damages of radiation exposures to workers and communities. And we have a regulator in the Canadian Nuclear Safety Commission that functions as an enabler of the industry rather than an impartial regulator acting in the public interest.

In March of 2005 at a CNSC in Ottawa a staff member, Mr. Clarke, was in discussion with members of the Commission. Staff had come in proposing policy changes to the way environmental assessments were conducted. What he noted is that the CNSC regulates based on risk. We say the risks are very high and we are seeing that daily right now, and sadly in Japan. Results of this industry don’t just affect a town or a region; they’re global in scope. Mistakes on risks and

INTERNATIONAL REPORTING INC.
risk assessments can be catastrophic. Risks are based on predictions and assumptions and in this industry it seems as if theory trumps reality.

I’d like to begin by just reading a conclusion that was given in the CNSC document. This helped set the stage for where we are going because what we would like to do is give you a few examples of the difficulties that we have encountered.

So this is in the CNSC staff report called the Synthesis of Health Studies. They’re referring to some cancer studies that were in our intervention, cancer and general mortality. So I’m quoting from the CNSC staff:

“Although there were some increases in some cancers, when findings were broken down by age group, sex and time period and residence coding such as cancers of the colon and rectum, brain and other nervous system cancer, esophagus, lip, pharynx, nose, sinuses, it was unlikely these cancers were
related to the nuclear industry within the town because of their lack of biological plausibility and the lack of experimental evidence linking them to Port Hope contaminants. They were more likely due to the natural variation in the occurrence of disease. The small number of observed and expected cases in deaths for most of these cancers and the wide confidence intervals makes any interpretation of findings uncertain.”

One other notable quote to set the stage is in on a case control study done by Queen’s University looking at lung cancer and levels of radon in homes in Port Hope. The study states:

“No conclusive evidence was found to link residential radon to lung cancer rates even among people living in homes with high levels of”
Two problems, one is that a study like that does not find conclusive evidence. Epidemiology does not find conclusive evidence and case control studies do not speak in terms generally of conclusive evidence. The standard applied here is ridiculous. What, in fact, was found was an association and that is what epidemiology finds. There was an association between elevated rates of radon and lung cancer in Port Hope in that study which was never publicized. This was confirmed by Dr. Eric Mintz, an independent epidemiologist, as well as the Peer Review Team for the municipality of Port Hope.

So Port Hope has been told these things which basically is a public relations document. In addition, this year Health Canada told Port Hope that there’s no need for further health studies of our community even though we still have emissions every day to our air and our water of uranium and fluoride and other contaminants, and we’re about to face a clean-up worth more than $300 million paid for by the federal government for what should be 3.5 million cubic metres of radioactive waste. Not only are
precautionary principles not applied, but neither
is common sense or common decency.

In our intervention we note the
U.S. Department of Health and Human Services
states:

“Ionizing radiation is
invisible, high frequency
radiation that can damage the
DNA or genes inside the body.
The U.S. EPA says there is no
level below which we can say
an exposure poses no risk;
radiation is a carcinogen.
It may also cause other
adverse health effects
including genetic defects in
children of exposed parents
or mental retardation in the
children of mothers exposed
during pregnancy.”

What we submitted was an excerpt;
what we would like to focus on for a few minutes is
what the United States has done.
The United States has made an
effort to accept responsibility for the exposure of
its workers and its civilians to radiation. The Radiation Exposure Compensation Act establishes a procedure to make partial restitution to individuals who contracted serious diseases such as certain types of cancers, presumably resulting from their exposure to radiation from above-ground nuclear tests or as a result of their employment in uranium mines.

There were three claimant categories: uranium mine employees, downwinders and on-site participants. In addition, there was also the establishment of the Energy Employees Occupational Illness Compensation program. Reading from a brief:

“Scientists have recognized an association between a number of cancers and exposure to ionizing radiation, namely all forms of leukemia, cancer of the thyroid, breast, pharynx, oesophagus, stomach, small intestine, pancreas, bile ducts, gall bladder, salivary gland, urinary tract, brain,
bone, lung, colon, and ovary,
bronchoalveolar, carcinoma,
multiple myeloma,
lymphomas other than
Hodgkin’s Disease, and
primary liver cancer, and
they’re exceptions.”

The Veterans’ Administration

Regulations define all cancers as possibly caused
by radiation. Other non-malignant conditions might
be caused by radiation, and they include -- and
they give a list of those. For a given individual
the Veterans’ Administration will also consider the
possibility that other diseases were caused by
radiation if supported by medical or scientific
evidence.

To be eligible, the Veterans’
Administration must be able to establish that it is
as likely as not that a veteran’s illness was
caused by their exposure to radiation during
military service. Veterans’ Administration gives
the benefit of the doubt to the veteran. So as
likely as not is over 50 percent, that is their
benchmark.

There we go. Just a couple of
statements that Congress made.

“Since World War II federal nuclear activities have been explicitly recognized under federal law as activities that are ultra hazardous. Nuclear weapons production and testing have involved unique dangers. Many previously secret records have documented unmonitored exposures to radiation and beryllium, and there are continuing problems at sites across the nation. The policy of the Department of Energy had been to litigate occupational illness claims, which deterred workers from filing compensation claims, and has been a major burden.

Over the past 20 years, more than two dozen scientific findings have emerged that indicate that certain of such employees are experiencing increased risks of dying from cancer
and non-malignant diseases. And what they
found was that this was occurring at levels below
-- they’re occurring at dose levels below the
existing maximum safe thresholds, so they changed.

What Canada needs are the kind of
public hearings that were held in the United
States, they need to be held independently of the
federal government departments that have the
control over the current situation to hear from the
public, to hear from the workers, hear from
communities, hear from doctors. Come into the 21st
century on the dangers of radiation.

Moving to item number 2, radiation
disasters in children. I’ll just make a couple of
points from this. Radiation exposure can be
divided into external, internal, whole body or
partial body. This is an excerpt from the American
Academy of Pediatrics, November of 2008. It states
that:

“Children have a number of
vulnerabilities that place
them at greater risk of harm
after radiation exposure,
because they have a
relatively greater minute

INTERNATIONAL REPORTING INC.
ventilation compared with adults children are likely to have greater exposure to radioactive gasses.”

This contradicts a contribution by Health Canada to the Ontario Ministry of the Environment when they argued that children do not have any greater risk.

Also a point we contradicted from Health Canada is when they argued that in Port Hope 90 percent of our exposure is due to ingestion. We argue, 90 percent or more of our exposure is due to air inhalation.

Point number 3: Canadian employees and community residents inhale radioactive emissions from nuclear facilities. And there’s a quotation taken from the Ontario Ministry of the Environment rationale document of the Draft Uranium and Air Standard.

“For a given uranium intake the inhalation pathway gives doses 200 times greater than ingestion.”

That’s why it’s critically important when doing risk assessments, when setting
standards, to state the facts as they are. That’s why inhalation for Port Hope people and noting that makes a big difference in the standard that you set.

Moving on to the biological test results. Our committee fundraised over $11,000 to pay the costs of a laboratory in Germany. We worked collaboratively with Uranium Medical Research Centre that totally volunteered their services. They received no funding at all. The directors, Dr. Asaf Durakovic, who has a CV more than 50 pages long, is a doctor of nuclear medicine. He is former head of nuclear medicine at Bethesda, Maryland hospital.

The results of our testing of 11 individuals, two controls and nine related to Port Hope, four were former workers at Cameco or Zircatec. And what they showed was unexplained contamination by uranium 236, which is the forensic signature of spent reactor fuel. It showed enriched levels of the 234 isotope in both the retired workers, and their civilian Port Hope subjects. It showed chronic long-term uranium contamination. One of the workers had not set foot in the plant for 23 years and was excreting uranium
236. One worker excreted depleted uranium, and that was many years after being in the plant. A child was included in the testing and also had the elevated 234. The control subjects did not show the contaminate and the ratios of isotopes that were present in the Port Hope subjects.

And I’d like to just read from a transcript of a CNSC hearing that was held several months after our test results were released. Under questioning I made a presentation at that hearing on behalf of the committee, and Member Graham asked Dr. Oliver:

“With regard to the issue of the presence of uranium 236 that was made by the intervenor, would you like to comment?”

Dr. Oliver, who was the former vice president of fuel services at Cameco stated:

“Yes. The issue of U-236 that comes from the reprocessed uranium that is fed back into the enrichment plants, I think if you go back to probably the ‘60s,
the fuel was reprocessed and still is reprocessed in some places like France. And that gives you back some uranium. The uranium needs to be enriched again to be used in reactor fuels so it is a small part of feed that goes into the enrichment plant. Because of that there is a trace of U-236 that comes back through the reprocessed uranium. That appears in both the depleted line and the enriched line because obviously U-236 is intermediate in mass between the 235 and the 238, so it sort of splits both ways. The levels are extremely low, so the health studies showed we are dealing with maybe a millionth of the uranium being of this U-236, and its radioactivity is, while
higher than natural uranium,
is not that much higher than
the overall effect of the
uranium that results with the
trace of U-236 from a dose
point of view, so it’s not
significantly different than
if U-236 was not there.”

What we see, what we hear is an
try to normalize spent reactor material in the
bodies of workers.

You’re going to hear from a worker
following our presentation, Dan Rudka, who is
courageous, he is ill, and continues on telling his
story and about his experiences despite threats to
himself for doing so.

Examples that we would like to
hold up at the moment around the elevated disease
trends, this is point number 4, that were not
recognized by the CNSC, I have read you what the
reaction was in the CNSC synthesis report, so that
just sort of cuts to the bottom line of what they
did with the elevated rates of disease in Port
Hope, which was dismiss them. They rolled them all
together and they averaged them, and they found
some way to say that they were not significant. You’ll notice that the US Department of Justice does not do that. It doesn’t expect its people to have all of the cancers, and it doesn’t say you have to have a couple for it to be significant. There are 36 diseases. Health Canada selected leukemia, lung cancer, breast cancer, and thyroid cancer, when it analyzed these studies. And even though it acknowledged that there were significantly elevated rates of disease, and that’s statistically significant, rates of disease, they managed to say they just didn’t find that plausibly relatable to exposure to radiation in Port Hope. But Dr. Mince, who was an independent epidemiologist, who was at our request accepted by the CNSC as an independent peer reviewer said there was a 13 percent elevation in Port Hope of overall deaths, 48 percent more cancer childhood deaths than expected, 41 percent more childhood leukemia.

Lung cancer was elevated for men and women in different time periods, female rates significantly elevated 1986 to ’96. Adult brain cancer was elevated for men and women; women more than twice the expected rate 1986 to ’97 and
significantly elevated in the entire study period.

Brain cancer in childhood, 50 percent elevation the entire study period, four times the expected rate, 1971 to 1985. Non Hodgkins Lymphoma, childhood, statistically significantly elevated during the entire study period.

Nasal sinus cancer significantly elevated for men; over five times the expected rate 1971 to 1985. Esophogial cancer, twice the expected rate for men ’71 to ’85. Women have a 50 percent excess the entire study period.

Bone, more than twice the expected rate for men. Colorectal cancer, 38 percent elevation for women. Circulatory disease, a 15 percent excessive deaths over a 42-year period. More than seven per year additional female deaths in Port Hope from cardiovascular disease than the Ontario average.

Female death rate rose dramatically from 1986 to ’96 with 100 more deaths than expected. This is in a small community. So our argument to you is that these statistics matter. We need the federal government, we need the regulator to look at the
United States experience. Either we have a serious
cOMPENTENCY gap here or a serious knowledge gap,
and we need it fixed because peoples’ lives matter.

Moving to number 5, the
transportation of radioactive materials on the
roadways, I’ll focus on the Cameco issue. We have
-- we agree with the individuals and groups that
object to the transportation of the steam
generators.

We have brought forward the issue
of Cameco and the uranium hexafluoride cylinders
that travel the streets of our town from the beach
front through the only exit possible, which passes
the children and adults walking to, cycling to the
beach.

They emit gamma and neutron
radiation. We have brought that forward now for
close to five years. Our concern about these
cylinders, they are not covered, and one of the
points that we learned is that there is blanketing
required in the European Union, and we don’t
understand why that is not required in Canada.

But these trucks drive up through
town, they go -- sorry -- they travel through our
community, they stop at red lights, they go on the
the 401, they travel to Oshawa, they travel to Montreal. And from Oshawa, we know -- we have access to information based on 2005, 156 cylinders of radioactive uranium hexafluoride, and they are approved for depleted uranium, natural and enriched, from Cameco which -- to be transported to Oshawa, loaded at Oshawa Harbour onto a vessel and transported to Rotterdam through Lake Ontario and the St. Lawrence Seaway.

The documents indicated that this happens several times a year. Dockings at Port Hope also apparently occur on occasion.

In these documents, Transport Canada states that shipments of radioactive dangerous goods are routine and standard on the Great Lakes St. Lawrence Seaway system. We say this must be changed.

Nowhere in the documents was there mention of the high levels of neutron radiation that are emitted from these cylinders, extraordinarily high when they are full. They speak in terms of gamma radiation, and it is clear that the men and women working on these ships would have no idea of the actual emissions from the cylinders.

That’s certainly our information
from reading these -- reading these documents. And
I would add that neutron radiation was discovered
in Port Hope by the Port Hope Community Health
Concerns Committee working with the Uranium Medical
Research Centre with special testing equipment
around 2005 walking up to trucks in the Cameco
parking lot.

So they sit here in the open,
children walk by to the beach, people walk by
walking their dogs, and these cylinders -- and you
could walk out and neutron radiation does not
attenuate for a great distance.

What did we hear? It’s just a
little bit of neutron radiation. Now, Cameco does
report on neutron radiation in its quarterly
reports to the municipality. Workers, their
dosimeters have not been capturing neutron
radiation, so that is another reason in public
hearings to look at the United States.

For one group of workers, there is
a list of presumptive diseases. That means all you
have to have is have it and be able to prove that
you worked in a setting where you were exposed. So
there’s -- 21 of those are presumptive diseases.

The others, you have to go through
a dose reconstruction. How do workers do that? They have both hands tied behind their back doing dose reconstruction when workers have been exposed, like those at Cameco, to neutron radiation with no monitoring, and the response of the employer being -- and the regulator, by the way, being, it’s just a little bit. This is cumulative. It is cumulative to all of us.

The last point, number 6, we had noted earthquakes. We had done some research on this when Cameco had proposed blending slightly enriched uranium on our beach front. They withdrew that application after significant resistance in the community from Families Against Radiation, from our committee, Lake Ontario Waterkeeper asking hundreds, literally, of questions.

But one of the things that we had researched was the seismic activity along Lake Ontario and the fault line here. Now, I know that you did have a presentation about this. I have just read brief summary that the expert said that that is not an issue.

We would ask you to give great pause to anyone tell you -- telling you that seismic activity in this area at the rate of
roughly one a year, clearly detectible, one in 1998 at 5.4, 95 kilometres northeast of Cleveland, is not significant.

We watched Japan with sadness, with anxiety. Please, let’s learn something.

Thank you.

CHAIRPERSON GRAHAM: You have two minutes, so I think that you probably want to say something.

MS. LAWSON: Well, thank you. My name is Pat Lawson, and I wanted to tell you briefly about the study we did. We hired Trevor Hancock -- Dr. Trevor Hancock, who some of you will know, did a significant lead study in downtown Toronto. He was paid through the AECB, and we -- he was hired to do a health survey.

That was the front end of what we were about. We knew of a lab in St. John’s that would look at our samples of urine, and by the time we had assembled these urine samples, this lab had been closed down by, I believe, the Canadian military.

Labs such as this were closed down at that time in the United States and Great Britain, the reason being that the Gulf War
veterans had come place, and the only place the
Americans, this UMRC group could get their samples
analyzed was St. John’s, Newfoundland lab.

And by the time we had our samples
ready, that lab had been closed down. So we had to
send our samples to Germany to be analyzed. And
Faye has told you the results of the analysis.

Our eldest daughter is one of the
victims of a brain tumour. She is still
miraculously alive, but she falls into that
category that sort of -- I think it was ’89 to ’99
or something. That where there were excess samples
of brain tumour in Port Hope, and she blames it on
the school that she attended, Dr. Powers School and
of course the ravines and everything about the town
that we all love.

And it’s -- it really bothers me
that the industry can sit down in front of a
computer and do an analysis and come up with a
health study report about our town.

We live it. We know -- we know
the people that are dead and dying and they’ve been
our friends all our lives. And that’s why we’re
trying to do something because another nuclear
generating station is a real threat to the health
of the people, so we oppose the Darlington Nuclear 
Generating Station.

CHAIRPERSON GRAHAM: Thank you
very much. We’ll open the floor now to questions
from our Panel members. And I’ll go first to Mr.
Pereira.

--- QUESTIONS BY THE PANEL:

MEMBER PEREIRA: Thank you. Thank
you, Mr. Chairman. And thank you for your -- the
considerable information you’ve provided on health
impacts and practice in the United States.

Aside with one issue that does
apply to the proposed operation of the new station
of Darlington, that’s to do with transport because
in the operation of the station, the proposed
station, there will be the transport of -- proposed
transport of low level and intermediate level waste
from the station to perhaps a storage facility near
Bruce.

And we have heard responses
previously from the CNSC on the standards used for
transportation. The CNSC staff, have any comments
on the observations presented by the intervenors on
radiation doses emanating from transport containers
leaving the Port Hope facility?
MR. HOWDEN: Barclay Howden speaking. In terms of the transportation of those -- the use of those containers, they’re governed under the Transportation of Dangerous Goods and the Packaging and Transport of Nuclear Substance Regulations.

And I think as we’ve discussed previously, the packages are built to meet the potential hazards posed by the material that’s being -- being carried.

In terms of the dose rates, they are very small, but I don’t have the exact numbers of what the requirements are.

Mr. Pereira, we’d have to gather that and we’d be able to report back tomorrow with the acceptable dose rates coming off the packages are.

MEMBER PEREIRA: So that would be a dose rate at a certain distance from the ---

MR. HOWDEN: Yes, normally it’s done one meter from the package.

MEMBER PEREIRA: So what you will provide us would be the dose rates for the packages that the intervenors have spoken about. And what would be the dose rate for the sort of reactor,
waste containers that would be proposed for the new generating station?

MR. HOWDEN: Yeah, for the low and intermediate level waste that would be transported potentially up to the Western Waste Management facility, those dose rates would be in the form of microsieverts per hour, but again, I would have to -- if you want precision, I’ll have to obtain that information for you.

MEMBER PEREIRA: Can we take it as an undertaking?

CHAIRPERSON GRAHAM: Yes, I will and that will be undertaking number 40. Timeframe, Mr. Howden?

MR. HOWDEN: Barclay Howden speaking. We can provide that to you on Saturday morning because the staff will have to put that together -- or today is Wednesday? We can give that to you Friday morning because the staff can compile the information tomorrow for you.

CHAIRPERSON GRAHAM: Thank you. Go ahead, Mr. Pereira?

MEMBER PEREIRA: Thank you. The second issue that I would like to touch on because is it relevant to the Darlington Reactor Project is
the question of earthquakes in the vicinity of Darlington.

We did have the presentation as you noted from the Geological Survey of -- Natural Resources Canada, the Geological Survey of Canada as part of that department. And they did talk of the types of earthquakes that have -- experienced in -- in Ontario and this part of Ontario.

And I believe, and I can’t be exact about it, but your data line -- more or less lines up with what they were saying in terms of the type of earthquakes, magnitude of earthquakes that you’d find in intraplate regions of Ontario, so -- but we will look at the information you’ve provided and look at in relation to what the Natural Resources Canada provided to us.

I believe they are going to be appearing before us again, Mr. Chairman; is that correct? And so certainly we will have a chance to hear from them again on their seismic hazard that would -- that could affect the reactor at Darlington.

CHAIRPERSON GRAHAM: Ms. Moore?

MS. MOORE: Thank you. May I clarify, when they appeared before, did they
provide this information to you? Were you aware that there is roughly one -- there was a period of about one a year?

MEMBER PEREIRA: I don’t know of the period, but they gave us a map with this sort of earthquakes that occurred in this region, so their magnitudes were on there.

MS. MOORE: Yeah.

MEMBER PEREIRA: And they were -- that was a special presentation on the second day of our hearings, but they are scheduled to make a regular presentation in the days ahead. I’m not sure when it’s scheduled.

CHAIRPERSON GRAHAM: I’m not sure, but they did give us a map that showed, like, stars or dots where every epicentre was and there a considerable amount. I mean, it wasn’t just one or two dots.

MS. MOORE: Yeah.

CHAIRPERSON GRAHAM: And that extended all the way south of Toronto to up into the -- to the Chalk River areas, so they did give us -- I mean, it did show considerable amount of that.

And I think -- I’m not sure when
that information is coming, but I believe they are coming back. And we’ll check to make sure and it will be posted on the website -- on our site.

Mr. Pereira?

MEMBER PEREIRA: Thank you. And in response to the presentation, there were a number of intervenors who asked about the design standard for the proposed reactor at Darlington and the design standard for reactors built in the United States, side of the lake. For whether they were built to a higher standard and the information we got back was, in fact, the Darlington Reactor was being built to a higher standard of seismic resistance than the existing reactors on the U.S. side.

And that is not surprising because the new reactor is being built to more modern standards to have a higher -- a quick tolerance, but that -- that is just for information, it’s not meant to be an assessment on my part.

We go on then to -- I’ll turn to CNSC staff and to seek your comments on the concerns being expressed about the position taken on the assessment of studies, various studies done in the Port Hope area by Health Canada, by CNSC or
for the CNSC and by other organizations. I heard reference to Queen’s University.

And the concern on the part of the intervenor is that the studies found not adequate basis to draw conclusive -- conclusions about -- about association of those -- those as in the Port Hope area with cancers that have been observed.

And I would like you to comment on that and to kind of outline the rationale for the -- for the failure to form clear associations between what the residents of Port Hope observe in their community and the data that we considered in the study.

DR. THOMPSON: Patsy Thompson for the record. The -- there have been over the years, a number of studies done of the Port Hope community because of the legacy issues of contamination in the community.

Those studies have ranged from the types we heard about earlier today in terms of the ecological descriptive studies.

There have been case control studies that Ms. Moore referred to for the study of radon in homes and lung cancer.

And there’s been cohort studies of
the workers in Cameco Port Hope facility.

The health studies conducted by Health Canada, the CNSC, and others have used the standards used in the scientific community for these kinds of studies.

The -- essentially the evidence coming forward from all of the studies was analyzed by the CNSC.

And the report that Ms. Moore refers to, that was presented to the commission.

And what we have done in that work, rather than looking at the studies individually, was to look at them using a weight-of-evidence approach so that we’d look at all the studies together to see what they were telling us.

And using this weight-of-evidence approach led to the conclusions that the contamination -- low levels of contamination in the Port Hope area had not resulted in levels of cancer incidents or mortality that were different from those in the regions.

UNKNOWN SPEAKER: Sorry, it’s a bit hard to hear.

DR. THOMPSON: Sorry.

And the work that CNSC staff did
to pull together that work and use a weight-of-evidence approach was reviewed by other experts in the field, so they -- our work was peer reviewed. And we also -- to validate the work that was being done in Port Hope over time was compared with work that had been done internationally for similar populations or similar sites. And the work was compared with about 40 studies done internationally.

And so what we see in Port Hope is consistent with what is seen in other communities, similar communities, elsewhere in the world.

MEMBER PEREIRA: Thank you.

I’d like to go on to get some clarification on a number of issues.

In the intervenor’s presentation on page 2 and the health effects, there’s a number of exposure figures given, and they’re given in grays.

And in this hearing, we’ve been talking about Becquerels and doses and sieverts. Could CNSC staff give us some equivalences there, or is that not relevant?

DR. THOMPSON: Patsy Thompson for the record.
For -- in most cases, a gray can be equated to a sievert, so a sievert or 1,000 milli-sieverts.

And so, for example, the -- in the last paragraph on that page where we say -- we look at .75 to one gray, that would equivalent to 750 milli-sieverts to 1,000 milli-sieverts or 1 sievert.

And similarly 3 to 6 grays is 3 to 6 sieverts, so 3,000 to 6,000 milli-sieverts.

And the doses of radiation that are being measured around Canadian nuclear power plants and are predicted for the Darlington new build are in micro-sieverts, so --

MEMBER PEREIRA: Thank you.

And I wanted to relate that to the evacuation and sheltering criteria presented in the EIS, which gives you the -- sort of the target levels.

So these health effects then help put into perspective for us what those evacuation and sheltering criteria mean. So that’s useful for us.

Also, there is a considerable amount of information presented in the -- in the
intervenor’s submission on practices in the United States for compensation of workers exposed to weapons testing or occupational hazards.

What is the practice in Canada for occupational health issues and for compensation and for things like weapons testing?

We haven’t done any weapons testing in Canada?

DR. THOMPSON: Patsy Thompson for the record.

I can speak to the monitoring of radiation exposure that is done by the CNSC.

During the course of employment of nuclear workers employed at facilities licensed by the CNSC -- essentially we’ve provided some of that information in an undertaking that was submitted to the panel earlier this week.

So individual workers are monitored during the entire course of their employment. And that information is kept at Health Canada at the national dose registry.

My understanding is if there was a situation where a worker was exposed to very high levels of radiation where health effects are expected that we -- it was explained earlier this
week by Mr. Sweetnam that the worker insurance
compensation board, probably in Ontario, would be
the organization in terms of compensation.

But the CNSC has a process. When
there are potential overexposures where we -- the
event is reported to CNSC, we follow up. We have
dosimetrists who do an independent assessment of
the dose.

And we have access to Health
Canada laboratories where tests can be done on
blood samples to be able to have a good idea of
what the doses would actually be.

So all of this is available and
would come into play if there was a potential
overexposure for a worker.

MEMBER PEREIRA: Thank you.

My final point, which I’ll pass
back to the Chairman, is a comment made about the
independence of public hearings in Canada, but I’ll
leave that for the Chairman to address.

Thank you.

CHAIRPERSON GRAHAM: Thank you,
Mr. Pereira.

Ms. Moore, you put your hand up
once.
Do you want to -- do you want to respond something to Mr. Pereira’s questions?

MS. MOORE: Thank you.

I did want to ask -- because I felt that Dr. Thompson hadn’t addressed, I think, a really important point in the -- in following up on your question to her about saying that the elevations that were statistically significant to any epidemiologist -- they met the bar. They met the high bar that was applied.

But the statement that it was unlikely these cancers were related to the nuclear industry within the town because of their lack of biological plausibility -- now, we don’t understand that.

And certainly in view of the science that we have read, I mean, we’re laypeople. We make no pretense that Ph.Ds and other -- anything other than personal Port Hope experience, but to say -- that sentence is political to us. Where is the science in that statement?

We do not understand lack of biological plausibility and the lack of experimental evidence linking them to Port Hope contaminants.
If there’s a lack of evidence,

it’s because the proper studies haven’t been done,

first of all.

But there’s certainly biological

plausibility.

No one can try and tell us that

they know what our dose is in Port Hope.

Everyone’s dose is unique. And we get it through

inhalation, and it depends where we are. We’re

talking about internal contamination, and we’re

talking about doses to cells around alpha

particles, right?

So I’m not understanding this at

all. There’s a lot of prejudging going on.

And going back to the whole risk

assessment issue that we raised at the beginning,

this is a huge assumption.

And this is our health.

And this was one of the few

studies that we actually got done. And at the

front of the actual study, it stated it’s because

of the pressure of the community, our committee in

particular, to do this work.

And so when we get this back, it’s

very distressing.
MEMBER PEREIRA: Thank you.

MS. MOORE: Thank you.

MEMBER PEREIRA: I’ll ask the CNSC staff to provide the clarification requested.

DR. THOMPSON: Patsy Thompson for the record.

My apologies for not addressing the biological plausibility. When the CNSC did the -- the weight of evidence study on all of the studies that had been done in Port Hope, we looked at the contaminants that were found in Port Hope in soils, air or vegetation, drinking water. We looked at the levels of exposure and then we looked at -- in the scientific literature, what types of health effects are associated with arsenic, for example, or fluoride or radiation and uranium?

And what we find, for example, for lip cancer or throat and these are cancers that are normally associated with smoking, similar to cardiovascular disease, is often associated with health styles that are -- lifestyles that are not necessarily the healthiest ones. And we know from many studies of -- very good cohort studies that have been done that, for example, cardiovascular disease, do not occur at doses less than --
than 1,000 to 2,000 millisieverts. So that’s what we mean by biological plausibility. There has to be an association between the contaminants found in Port Hope and the diseases we were looking at.

MEMBER PEREIRA: Thank you.

CHAIRPERSON GRAHAM: Thank you, Mr. Pereira. Madam Beaudet?

MEMBER PEREIRA: Thank you, Mr. Chairman. I have only one question. In the protocol with the United States that you have submitted to us, I’ve noted that they include energy employees, military personnel, but also community downwinders. And CNSC has just indicated that the protocols we have for compensation would have to be only, if I am correct, with workers.

Do you have -- is there any other protocols for, let’s say community people that feel that, you know, they -- it’s important for us to know if -- because Darlington is coming up, that you would have a community that requires a protocol also for people living in -- close to the new units. Is there anything set up for that?

DR. THOMPSON: Patsy Thompson for the record. I would offer that the -- the first standard is to have a facility that is regulated
tightly and has operated safely and that the doses around all Canadian nuclear facilities are well, well below the public dose limit and are not associated with doses that would cause health effects.

Having said that, there is experience in Canada and elsewhere in terms of contaminated site programs that look at environmental and health issues related to contaminated site programs, but I don't have the details. We would need to speak with Health Canada in terms of -- and Environment Canada in terms of what has been in place for contaminated site programs. I’m familiar with some programs in the States, but not in Canada.

MEMBER BEAUDET: Would it be possible to have that information?

CHAIRPERSON GRAHAM: CNSC, can you get that? We’ll give it an undertaking if you can and it will be number 41, if you could provide that information to the Commission -- or to the panel.

DR. THOMPSON: Patsy Thompson for the record. If I could suggest we will contact Health Canada tomorrow and see what is feasible by what time.
CHAIRPERSON GRAHAM: That would be fine. Madam Beaudet, is that satisfactory?

MEMBER BEAUDET: Yes, thank you.

I’d like to go to OPG now. You have I think an annual report on your website that indicates all the data that is collected for different locations around a site to monitor if there is any emission -- excuse me. Now, those reports are made public and they are submitted officially to whom? CNSC? Health Canada?

MS. SWAMI: Laurie Swami for the record. It’s a licence requirement for our facilities to submit these reports to the CNSC on an annual basis. At the same time that we submit it, we also make it publicly available.

MEMBER BEAUDET: Thank you. Thank you, Mr. Chairman.

CHAIRPERSON GRAHAM: Thank you. I have a question for OPG. There’s been discussion about the technologies and the CANDU -- what type of fuels it uses, but if there was a boiling water reactor technology that was needed to be used, you would use a LEU fuel I believe. And what I’m wondering is that fuel is, to my knowledge, is not produced in Canada now so that would have to be
brought in from another location; is that correct?

MR. SWEETNAM: Albert Sweetnam for the record. If we did select that technology, as part of the contract there would be also a separate contract for the fuel supply and the vendor would actually determine whether they manufactured it locally or if they import it.

CHAIRPERSON GRAHAM: And my question to Mr. Howden of CNSC, what additional regulatory requirements would be required to supply LEU fuel to -- to a reactor at Darlington if such -- first of all, if such a process was approved and then if -- if that technology was -- was adopted?

MR. HOWDEN: Barclay Howden speaking. If the fuel was manufactured outside of Canada, the regulatory requirements would be on the -- the transport of the fuel to the facility. At the facility, the facility’s licence would have to allow it to be able to possess LEU fuel. If there was a proposal to manufacture the LEU fuel in Canada, the facility that would be doing that would have to undergo the regular regulatory process in the form of an environmental assessment if the facility wasn’t qualified to do that at this point, followed by licencing. And they would have to go
through the regular licencing process and because
it was LEU fuel, they would have to institute
criticality controls within the facility according
to Canadian requirements.

CHAIRPERSON GRAHAM: But at the
present time there is no environment EIA approval
for any manufacture in Canada; is that correct?

MR. HOWDEN: Barclay Howden, could
you repeat the question, please?

CHAIRPERSON GRAHAM: I just
wondered if -- is there any facility in Canada that
has the regulatory authority to do the processing
now in Canada?

MR. HOWDEN: I believe the GE
Hitachi facility in Peterborough has gone through
an environmental assessment, but has not been given
the authority to actually manufacture LEU fuel.

CHAIRPERSON GRAHAM: No, that was
removed from their licence I believe. Okay. I
just have one more question for Dr. Thompson and
then I want to respond to Ms. Moore. The study
that was referred to by the Port Hope group today,
the one that they paid for, the $11,000 one and
which is attached to their intervention, and -- and
I didn’t get your response to -- clearly to Mr.

INTERNATIONAL REPORTING INC.
Pereira. Have you reviewed that and do you have
comments on that study that was -- I’m referring to
the $11,000 study and I can give you the official
name, but I’m sure you know it? What I’m talking
about is the 2007 Uranium Medical Research Centre
study.

DR. THOMPSON: Patsy Thompson for
the record. The CNSC staff as well as Health
Canada reviewed the results of the concentrations
of uranium in urine in the samples that were
provided by citizens of Port Hope and we have
compared these levels of uranium in urine to levels
naturally occurring, not just in Canada, but
elsewhere in the world. And what we found is that
the levels of uranium in urine in the citizens of
Port Hope, their samples that were provided, were
in the range of those that we find naturally
occurring. In terms of the ratio of the different
uranium isotopes the information we have received
from Health Canada in terms of the ability of those
analytical methods to detect isotopes and very low
levels of uranium in urine was that the isotopes
were almost at the limit of detection, and so the
ratios were -- I would say there was uncertainty in
the ratios measured because of the very low levels
of uranium and the close to limit of detections in
the samples.

CHAIRPERSON GRAHAM: I’m not a
scientist, so I’m going to ask probably a question
that some people may find wrong to -- not wrong but
not understanding why I would do it, but I just
don’t understand one thing. You say it was close
to the levels, and I understood there were two
background levels that were normal or didn’t -- two
-- I can’t even think of the name, but two that
were outside of the study area. And how do you
account for that? Could you just explain it a
little better because I just don’t understand. And
maybe I’m not expressing it very clearly, and I
apologize.

DR. THOMPSON: I’ll do my best and
if -- if needed, we can get the -- our document
from back in the office to provide more details.

Uranium is naturally occurring,
and so all of us have uranium in our urine.
There’s been a number of measurements done in many
places in the world that provide a range of uranium
in urine from naturally occurring uranium. And
what was found was that the levels in the samples
provided in that study were within the range of
natural background levels of uranium in urine.

Those concentrations are low, and so when a uranium sample at a low -- at a low concentration is analyzed for the different isotopes of uranium, then each isotope is at a very low level and close to the limit of detection. So when each is at close to a limit of detection, then the ratios of one isotope to the other become uncertain.

CHAIRPERSON GRAHAM: Thank you. I just want to respond to one comment about the independence of the Commission, and I don’t want to get into a debate as a member of the Commission -- not only referring to this panel of the Commission, I think I was a CNSC member for 12 years, and I’ve always taken great pride in being independent. I’ve always taken great pride that we never even -- as commission members never even compare or discuss anything before we go into those hearings.

Every question that’s developed is either from what we hear at the hearings, but we develop our questions on our own over a period of probably two weeks before we go to a Commission. So I’ve taken pride, and knowing my colleagues at the Commission, the appointed ones who are part-
time Commissioners, we have always taken pride in
being independent.

And I think some of the decisions
we have made are rejected as recommendations and
changes that perhaps sometimes were recommended by
the Commission itself stand for that. So I just
want to make that point. I don’t want -- I don’t
think it’s -- a person should be taking time to
defend themselves, but I’m not, I’m defending my
Commission colleagues.

I’m going to give you the last
word, and then we’re going to go to questions.

MS. MOORE: Thank you. I had a
couple of points that I would like to say. First,
I have a letter with me that came from Health
Canada to Ted Weyman of the Uranium Medical
Research Centre, the Acting Director General.

They don’t really make a note that
there’s a problem in identifying the isotopes
because of the low amount. They acknowledge that
there’s an anomalous ratio and the elevated U-236
concentration suggests that these individuals were
exposed to another source of uranium that is not
present in nature because the U-236 isotope is a
result of a nuclear reaction.
But the argument ends up being from them that it doesn’t really matter what kind of uranium it is, which we find pretty astounding. When you look at the US experience and the US science and there are lots of problems at US facilities, but they have been dealing with isotope ratios. It is the fundamental basis of the nuclear industry is isotopic ratios.

They have been working on this for 40 years, so the kind of uranium matters. It has different health effects depending on particle size, the way it is delivered, and if is internal and if it is insoluble and remains in the body for many years.

I’d just like to mention that the issue about 236 is really important around what the communities don’t know, and that is such a problem. The power in a situation of a -- the nuclear industry is that it is concentrated in the hands of a very few, and those very few do the risk assessments and they make the judgements, they make the assessments.

You saw that our elevated rates of disease in Port Hope were dismissed with two sentences. It’s not plausible. It’s absolutely
plausible, absolutely plausible, and it will be in public hearings. That’s where we need the time, we need the expertise of people to come who are external and are able -- and that’s what I’m referring to around having independent public hearings, which is really what they did in the United States and gave rise to the legislation for the workers, for the military, and for the community down winders.

That’s how you get a sense of what is happening in Canada across the industry. Right now, everyone is very divided, they’re very isolated, no one knows what’s happening actually in other communities.

And I’d like to say finally that in Port Hope, we continue, because there’s an operating industry with ongoing air emissions which they claim are 120 kilograms per year, but that’s -- had to be adjusted up when the Ministry of the Environment tackled some of their reports and corrected them. At one point, the Ministry of the Environment was saying it was 300 kilograms a year. This was about six years ago, so we’re not exactly sure.

More than 60 percent of them are
fugitive emissions; they’re not controlled. So we’re exposed to that, and we have waste all around the town that needs to be cleaned up. That no one can tell us -- and we have trucks driving by, so we have internal from inhaling particles, we have external from the trucks and the UF-6 cylinders. No one can tell us what our individual dose is, and they cannot begin to tell us what is plausible. Thank you.

CHAIRPERSON GRAHAM: Thank you very much. The process now is I go to questions. OPG, do you have any questions to the intervenor?

MR. SWEETNAM: Albert Sweetnam. No questions.

CHAIRPERSON GRAHAM: CNSC, do you have any questions to the intervenor?

DR. THOMPSON: Patsy Thompson. No questions.

CHAIRPERSON GRAHAM: Government departments, federal or provincial, do you have any questions for the intervenor? If not, then I understand I have one intervenor from the floor, and that’s Mr. Haskell over there. Mr. Haskell, if you’d take the microphone there, please?

--- QUESTIONS BY THE INTERVENORS:

INTERNATIONAL REPORTING INC.
MR. HASKILL: Good evening, Mr. Chairman. My name is Sanford Haskill from Otty Point, Ontario (ph). Could I ask two questions or just one?

CHAIRPERSON GRAHAM: We want to get to the next presenter, but I cut you off the other day because of not -- a question that pertained to something that wasn’t with this, but I’ll allow you two tonight, sir.

MR. HASKILL: Thank you. I was disappointed the other day. My first question is, I keep hearing about the study that says there’s no earthquake fault around there. Where could I get that study? I can’t get it on the internet. We live so far out in the country we can’t get high-speed. There’s nobody behind us, we’re out that far, where can I get these studies that you keep referring to, please?

CHAIRPERSON GRAHAM: That study was presented the other day and those maps and so on. I’m not sure -- do we -- I’m not sure whether we print hard copies, but let me -- let us see if we can get it for you. We realize not everyone has computers and printers and so on, and to accommodate everyone and in fairness, we’ll try and
find a way, I’m not promising tonight you’re going
to get one, but we’ll do our best.

MR. HASKILL: Thank you, sir. If
you can’t get it, where can I get it?

CHAIRPERSON GRAHAM: Well, it is
on the -- it is registered -- it is on the website,
and -- I believe those studies because they were
presented the other day and I believe they’re on
the website, and our secretariat will try and find
out how you can find it.

MR. HASKILL: Thank you. My
second question, and thank you for allowing it,
this transportation of -- I forget what you call it
-- historical waste or whatever I’ve got what you
call historical waste or whatever from the
Darlington plant. Does that -- when they truck it,
does it go through the chicken coop on the
highways, what we call chicken coops or the weigh
scales, do they go through there?

CHAIRPERSON GRAHAM: You’re
talking about the waste that may be going up to the
Western Waste Management facility at Bruce, is that
what you’re talking about?

MR. HASKILL: Yes, I am indeed.

CHAIRPERSON GRAHAM: Okay.
MR. HASKILL: And I understand it’s going there as we speak right now.

CHAIRPERSON GRAHAM: OPG, would you like to respond how that travels? I’m not sure of what chicken coop is, but the weigh scales, does it go on the regular highways and meet all the transportation requirements?

MR. SWEETNAM: Albert Sweetnam for the record. When any truck travels on a highway in Canada it’s subject to certain regulations. One of those regulations is occasionally trucks are pulled off into weigh stations to make sure that their weight is correct, and that the distribution amongst the wheels is correct. That’s done by the Ministry of Transportation in Ontario, and our trucks are also subject to that regulation.

CHAIRPERSON GRAHAM: And I’m going to add for the benefit every transport hauling hazardous waste has to display the triangle sign of what that hazardous waste is, whether it’s fuel or whatever it is, and is low-level waste considered a hazardous waste, does it -- does it carry a rectangular sign the same as the others?

MR. SWEETNAM: Albert Sweetnam, for the record. That's correct. It has a distinct
symbol on it indicating hazardous waste.

CHAIRPERSON GRAHAM: Thank you.

MR. HASKILL: Mr. Chairman, I’ve got a supplement to that --

CHAIRPERSON GRAHAM: All right.

Now, that’ll be the last one, okay.

MR. HASKILL: Would it be possible to have the chicken coop people with a machine to go around and check these trucks to see if there’s anything coming off them when they go through the weigh scales; would that be -- could I ask that the CNSC or whoever the regulator is, or Transport Canada, that they test those trucks to prove to us that they’re not giving off some kind of stuff we don’t need in our -- where Helen Caldicott told us.

CHAIRPERSON GRAHAM: Thank you.

I’m not sure what -- what authority we have, but we’ll take your suggestion under consideration to see if we do have authority and how that may be relayed if we don’t have the authority. At least the information will be relayed to the Ontario Ministry of Highways or whether it’s that or security and so on.

MR. HASKILL: Thank you very much.

CHAIRPERSON GRAHAM: Thank you.
very much. Ms. Moore, Ms. Lawson, thank you very
much for coming tonight, it’s always a pleasure and
safe travels back to Port Hope. Thank you very
much.

MS. MOORE: Thank you.

MS. LAWSON: And Mr. Graham, if I
may say so, it’s not the commissioners with whom we
have a problem, it’s the staff.

CHAIRPERSON GRAHAM: You always
get the last word.

(Laughter)

MS. MOORE: Important
clarification.

CHAIRPERSON GRAHAM: Thank you --
thank you very much. We will now go to the next
presenter that’s asked to be an intervenor tonight,
and it’s found under PMD 11-P1.109. And it’s Dan
Rudka. Dan, would you come forward, please.

--- PRESENTATION BY MR. RUDKA:

MR. RUDKA: Thank you, ladies and
gentlemen for letting me speak to you this evening.
My name is Dan Rudka, I’m a former nuclear energy
worker. I am one of the UMRC tested people for
radiation inhalation. I am also a former resident
of Port Hope. I now live in Clarington, and I’m
not really that brave because I -- I let the
municipal authority and powers to be put enough
pressure on me that I had to pack up my family and
leave, so I’m not a brave person. Thank you, Ms.
Moore, for saying so.

Anyway, initially I’d like to
speak a little bit about expense. In 1999
approximately $30 billion of energy debt was
transferred to the people of Ontario. This debt
exists before we’ve never been able to bring a
nuclear facility on time or on budget. And we
still pay the 270 percent cost overrun at
Darlington. That’s from the original project.

In 11 years, since the transfer of
$30 billion Ontarians, they have paid $36.3
billion. And we still owe $27.6 billion. That’s
110 percent of this loan has been paid, we’re still
left owing 90 percent of the principal, and there’s
absolutely no reason to believe that the new
Darlington is going to come in on schedule and on
time.

The Ontario government gave us a
book that’s sent out to all the -- all the homes,
and it said, “Electricity prices are changing, find
out why.” The booklet states over the five -- next
five years there’ll be an increase of 7.9 percent.

Then over the next 20 years it’s projected increases of 3.5 percent per year, and the booklet now says, “How can I manage costs?” Well, the obvious answer here is that we can’t manage costs. This is going to start to put undue hardship on many people within the province, especially the elderly and disabled. The OPG, I think it needs to pursue other ideas and options where growth managed and increased marginally as demand requires.

Now, stretched along the north shore of Lake Ontario, the real nuclear reality is we’ve got Pickering, Darlington, Port Grandby, Welcome Weigh Stations -- Weigh Storage Stations, and then there’s the Port Hope Nuclear Fuel Refining Conversion Plant. Mayor Thompson, I believe, called it the nuclear corridor.

One would expect because of the AECL position and Canadians trying to create work, that we will end up using CANDU reactors for the new Darlington project. They’re not the clean producers that they’re advertised to be. Tritium is mostly what we hear about, but there’s many other things from propanoic acid to ammonia, benzene, hydrazine, nitrogen oxide, phosphoric
acid, sulphite oxide, and it goes on.

Now, CANDU heavy reactors produce higher amounts of tritium than other reactors. Absorption and inhalation of tritium is dangerous. These emissions contaminate the air, water, land, wildlife, and without a doubt the people in the area.

Now, in the year 2004 it was estimated that CANDU had left us two million spent fuel rods, 36,000 tons stored in cooling ponds. Twenty seconds in front of one of these will result in a lethal dose of radiation. That’s just in front of one bundle.

Now, further along the shore we have Port Grandby and the Welcome storage sites. Both sites have drainage of radioactive effluent into the lake. For decades it wasn’t treated, but even in treated effluent, it’s still toxic to the fish. These ponds are not covered. There’s no deterrent in place for water fowl that frequent the ponds and geese that nest there every year.

The Welcome site, effluent drainage pipe originally went a few feet out into the lake. It would eventually got broken up and just ended up stranded on the shoreline. A new
pipe has been put out a few hundred feet out into
the lake where it would once again come to the
surface. Now, it’s concerning that the technology
that runs our nuclear stations could not engineer a
method to keep the pipe under the water.

Now, when that -- that pipe gives
me some concern. When the Welcome drain pipe was
exposed on the shoreline, I went to the area in
late summer, it was during Monarch Butterfly
migration, and the area around the pipe, for 20
feet to the west, 50 feet to the east, was covered
with dead Monarchs. I mean hundreds. Further
inspection showed that there were also several dead
fish, remains of birds, skeletal remains of small
animal.

One year later I returned during
the same migration for Monarchs. The pipe was now
out further in the lake, over the same area of
beach, one dead salmon. And that can be expected.
Not a single butterfly. But now I can’t help but
wonder what’s going on at the end of the lake where
that -- where that pipe is stretched out into. I
mean, it really shouldn’t be flowing. These pipes
should not be flowing any radioactive effluent of
any kind or any toxic materials into our lakes.
Now, next place along the lake we have Port Hope, industrial leader in nuclear fuel production for 70 years, and the proof to that legacy lies in Port Hope area initiative, and the project is budgeted to take 260 million taxpayer dollars to clean and store radioactive deposits throughout the town. Will this succeed on time and on budget? I doubt it very much.

Now, further concern of this cleanup is exposure by way of inhalation of contaminated airborne particulate. And this will be resulted from the methods used and the procedures used during the process. Now, initial indicators from the first property that was cleaned this past fall indicated that there are problems with the present procedure plan. Over ten years ago the Port Hope area Initiate Management explained to me that all the problems, dust being the big concern, were all under control. And I was assured that they had it all figured out. We’re now learning otherwise. And that -- they’ve been in operation since 1982, and I sort of wonder what’s gone on over the last 30 years.

Anyway, as this cleanup goes on through Port Hope and it moves ahead to -- to clean
the soils and Cameco’s fuel conversion facility right down the road, on the waterfront, will continue to release out of the exhaust stacks a minimum of 125 kilograms of fine uranium particulate and they’re going to dust it back over the town and into the lake.

The ground that Cameco stands on, it’s contaminated, it’s riddled with test wells, and the contaminants leach into the ground and eventually into the lake.

And then across the lake, our American neighbours are spending $5 billion over the next five years to clean up the Great Lakes. While in Canada, we are counting that effort to clean these lakes that we are also dependent on.

With that in mind, Port Hope, because of its close proximity to the nuclear fuel fabrication plants releasing their airborne particulate, and the fact that its new water treatment plant was constructed to the immediate west next door to Cameco’s waterfront plant, the population’s health should be studied and monitored with today’s new technologies by an independent study group.

The CNSC, Health Canada, the local
politicians say we don’t need new studies. They say the old ones are fine. But the resistance and the reasoning behind this I find very questionable, and it should be very concerning to all.

To be so resistant to these new and more accurate studies in a nuclear town draws question, suspicion, and concern of the leadership and the authority that resist.

It is claimed that Port Hope -- the population is safe and healthy.

And in the same mouthful, it’s claimed we’ve got to clean the town’s 1.2 million cubic metres of radioactive waste. Why?

You know, if it’s clean -- why do we need the cleanup if it’s not dangerous to people?

And it’s quite obvious that there is a danger here.

The indicators -- there are indicators in this town that suggest people are in health distress.

You don’t have to listen to Health Canada’s studies or the CNSC’s studies. You just have to live there.

If you go into the one walk-in
clinic, it’s constantly backed up with people right
eut the hall.

I took a look at the pharmacies in
business. Port Hope’s population of 16,500 keeps
four pharmacies in business.

Based on the number, much lower
than the reported average, I took these numbers,
and I calculated them low intentionally. That
basically every 27.5 days, 16,500 prescriptions are
given out in Port Hope. That covers the
population. So it basically equals the population
every month, and that’s -- so an average of 13.2
prescriptions per person.

There’s something wrong there,
there really is.

If I go to one pharmacy, the only
pharmacy -- the busiest one, still the cycle, every
41 days, the full population has had prescription
medicine.

Now, I know not all people are
going to take prescriptions and some are going to
take multiple.

However, that’s quite a number.

And to top that then, in the local
news, January 21st, Northumberland Today, Port
Hope’s daily paper, on page 2, the headline read: Local Lung Cancer Rates Exceed the Provincial Average.

The Committee for Examining Radiation Risks of Internal Emitters established in 2001, I’m sure most of you are familiar with it. They listed the following concerns:

There are important concerns with respect to the heterogeneity (ph) of dose delivery within the tissues and cells from short-range charge particles emissions, the extent to which the current models adequately represent such interactions with biological targets, and the specification of target cells at risk.

Indeed, the actual concepts of absorbed dose become questionable and sometimes meaningless when considered -- considering interaction at the cellular and molecular level.

In other words, where hot or warm particles of plutonium or uranium were located in the body tissue or were sequentially decaying radionuclides, like strontium-90 or organically bound, like, example, DNA, dose means nothing.

It continues. This is massively
significant. Official radiation risk agencies universally quantify risk in terms of dose. If it -- dose means nothing, and the agencies know nothing -- can give no valid advice.

Their public assurances fall to the ground. They can no longer compare nuclear industry discharges with the 2 milli-sieverts we get every year from natural radiation.

The dose from a single internal alpha particle tracked to a single cell is 500 mSv. It is that dose that will cause genetic damage, and the body dose of this dangerous particle will be miniscule.

Now, as you know, I’m a former employee of the nuclear industry in Port Hope. The standards for exposure were laughable if the truth had not been so frightening. As a civilian, I’m allowed 1 milli-sievert, but as soon as I sign the application and take the job, all of a sudden I can take 50 milli-sieverts per year.

Well, I’m here to tell you that that -- I personally could not take that.

Now, some years ago, in 2005, the
United States Academy of Sciences made a statement about Canada’s permissible dose levels. They stated, Exposure to low doses far below the permissible doses assigned by Canada’s regulatory agency can cause fatal cancers. They went on to say, The perfect crime.

We know people have been killed by radiation. We know who did it. We know the lethal weapon, but we cannot prove that any particular individual was actually killed this way. Now, the situation is a result of high acceptable dose levels for radiation exposure in Canada. The accepted levels are so high that rarely is that dose suspect enough to cause or be responsible for sickness, cancer, or death. The latency period with exposure is often ignored and works for the industry and not for the worker. Now, the Canadian nuclear industry and the CNSC and our political leaders hide beyond this truth. Because of this, people are suffering. Now, not long ago at the Bruce power station, there was an accident. Initially 563
workers were said to have been contaminated by way of inhalation with alpha radiation.

The number was quickly reduced to 195 exposed workers.

Testing assured these workers that the levels did not exceed regulatory levels, so they should be all right.

Now, this should be reassuring, but it’s not as you can’t set a safe standard for inhalation, and very little is needed.

Inhalation of radioactive material has no relation to the CNSC’s dose regulations standard.

With inhalation, one can be well below the dose standard and still not survive. They may likely die of some other attributed cause that will precede cancer.

Now, it was reported recently in an Owen Sound paper that Bruce Power workers, the majority of the boilermakers that got laid off during this period of trouble, were gentlemen or guys that said anything about safety or got sick, and this sounds a little too familiar for me.

I was a former nuclear worker from Port Hope.
I have suffered a multitude of problems, and I still do. Some are life threatening.

The obvious is skin lesions, weakened bone structure, digestive problems.

I have two lung diseases, and I have one extremely rare one that is very determined.

And this is all prior to cancel -- caner, I should say. You know, I mean, I don’t have cancer yet. I have that to look forward to by the standards.

Now, in the early stages, for over a year, I vomited every day. I still do.

I destroyed clothing because my sweats would actual deteriorate the clothing and take the colour out of them.

I had bone splints. It grew out of my gums into my cheekbone.

I’ve had surgery to my face. I’ve had templates to rebuild bone structure that has been deteriorated.

In 2001, I had lung surgery. I was on oxygen. I had lost a third of my bodyweight, and I was not expected to survive.
In 2007 -- by the way, I did make it.

In 2007, I was tested for uranium exposure by the Medical Research Centre, urine analysis testing. I was one of nine tested. They discovered that I inhaled U-234. Enriched 235, 238 were discovered, but unexpectedly U-236, spent reactor fuel, dirty fuel, it was present in my body.

Now, some time later at a hearing for relations at Cameco, the company was forced to admit that they were recycling this dirty uranium. Spent reactor fuel with dirty fuel, it has plutonium, polonium in it. Now, they were doing this without the knowledge of the CNSC.

And what did the CNSC do about it? Absolutely nothing. No discipline for the company. They did not recognize us. There -- basically there was no responsibility at this level. To me, it presents something -- nothing short of criminal, really, just to ignore this.

Now, the testing of these nine people, including civilians, may be indicative that a majority of the population has been exposed to
inhalation, and further testing the Port Hope
population is needed to verify this.

Now -- and with the uranium proven
to be in the bodies of all nine tested by the UMRC,
by the CNSC’s standards, in all probability, all
nine of us should be licensed.

As far as small amounts as Ms.
Thompson referred to, well, my testing, my urine
samples was 11 years later, so I imagine that the
amounts would be much smaller 11 years later.

I would love to know what I had
initially, though.

From Pickering to Port Hope, we’ve
got all this dangerous material going up and down
the lake. It’s in the air. It’s in the
communities.

And the symptoms to exposure can
be very subtle and hard to diagnose, I expect,
responsible for many illnesses and health problems.

And the most immediate example of
that is our children.

Never in the history of mankind
have we seen so many young children sick or dying
of illnesses and disease usually reserved for
adults.
Additional nuclear reactors at Darlington are only going to intensify the problems in regards to exposure and the health of the population.

It will only assure the chain after mining to fuel production to nuclear waste will continue to cycle up and down Lake Ontario.

That also means radio particulates -- radioactive particulate in the lake, the air, and onto the population at large.

This does present an impact on our Health Care System. I’m present -- present myself as evidence to that.

Excuse me -- excuse me. Those that render the responsibility for what has happened to me and for my condition have really taken no favourable action.

And this is really concerning. If we have a minor problem or a major problem, is this what the people are going to expect in this community? Are they going to hear anything other than it was below regulatory levels and everybody is safe? Because we hear too much of that.

Now, April 26, the anniversary of Chernobyl and now we have Japan. And I am pretty
sure now if we even have a smaller incident in Canada, this would be the end of the industry. And right now if it was, we have no backup resources to produce that extra power that we’re going to need. We have to look at something differently.

Now, in the last ten years, I’ve been involved with the Canadian Nuclear Safety Commission. And my confidence in their ability of making the industry accountable, of being accountable themselves has steadily decreased to the point where I don’t trust them to protect the Canadian public in any way, shape or form. And that is the staffers, that is not the Commission Board.

I have through experience, learned that they do protect the industry themselves and CNSC’s relation with the industry has become dangerously biased.

For example, I refer to the previous mentioned incident of spent reactor fuel without a licence being used in Cameco. And over the years, I’ve heard a lot of things, unbelievable and this comes from the companies in Port Hope. This comes from the CNSC.
I’ll just repeat a few of them to let you know just how silly it gets. I mean, what do they think of the people here? What do they think of us?

We were told once publicly at a council meeting that you can eat five pounds of it, uranium, and it won’t kill you. I’ll add to that, you probably wish it did kill you.

In reference to myself, we’ve never seen anybody as sick as you are, obviously that gentleman in the industry has seen radiation sickness, but he still did nothing favourable.

I’m going to go through this a little quicker. And a CNSC epidemiologist had no ideas what caused my skin condition that I showed her. It medically acknowledged the second -- the secondary condition to radiation exposure. And she had no idea what it was.

And through all the comments, I’ve -- my very, very favourite. One said -- a lady said, a CNSC staffer, “I am so very, very sorry for what has happened to you and I say this personally and not on behalf of the CNSC.” That said it all to me in a nutshell.

Now, the CNSC has not answered many questions that I put to them over the last ten
years to include an investigation into exactly what happened to me while I was at Zircatec, now Cameco, that left me contaminated, sick, disabled, no longer employable. Who’s responsible for this? The company, an individual? Somebody holds responsibility and had control over what actually did occur and they have never had to answer to any authority.

The CNSC has shown no concern in my case, leaving to expect they don’t give a care in the world about nuclear workers.

Ms. Thompson said that they -- that they have an incident, they investigate, they check on them. And I’ve been waiting for 16 years, Ms. Thompson, where is my investigation?

To be honest the CNSC needs an overhaul, a change of perspective. For example, U.S. nuclear workers, which you’ve just heard from Ms. Moore, 36 cancers or conditions are accepted and Canada we only have four.

The U.S. has paid out 50 billion dollars in compensation for nuclear injuries and illnesses. Canada has no problem -- or no program. Going to the Workers’ Safety Insurance Board as Ms. Thompson suggested, I’ve been there. They don’t
have a clue about nuclear. They go back to the company for their answers and I’m sure you can imagine what will happen out of that.

In conclusion, from Pickering to Port Hope to nuclear contaminations has contaminated land, water, the air, the local inhabitants.

The consequences of this action and the cycle along the lakefront will only lead to continued contamination that will basically last forever.

The future of this industry and the effect on the lake and the land and the people with all the problems -- or will be all the problems of another younger generation that have put their trust in us.

To add more reactors at Darlington will only ensure nuclear cycle continues on our lakefront and the dangerous stock of nuclear waste will continue to grow, but that too is for future generations because presently we certainly don’t have a clue of how to deal with radioactive waste other than burying it in the ground.

We -- the demand on Darlington for nuclear fuel will ensure that Port Hope’s nuclear
waste cleanup will continue or after that cleanup
is done, the company or the nuclear industry there
will continue to blanket the town with fine
radioactive dust. And for what reason? Because
they’re going to have to clean it up again one day
then.

The water will continue to be
contaminated and the water that we share with all
of the people along the lake including our American
neighbours -- and this kind of activity is having
consequences in our life.

With the people, what are the
people with children burdened with so many health
issues, where does it come from? Pollutants,
genetics? If it is passed down genetically, the
damage had to start somewhere from some cause. And
on that note, never has a culprit ever been -- had
such an opportunity to affect the population to
such a degree as uranium or radiation.

It’s silent, it’s invisible,
odourless and usually tasteless until it’s too
late.

Am I running out of time, sir?

CHAIRPERSON GRAHAM: You have
about three minutes.
MR. RUDKA: Very good. Thank you.

Well, I’m just going to skip down then. I think that at this time for the cost of nuclear and the risk and the danger of population and illness and politics around it, I have to wonder, why are we preparing to do it again?

This area of Darlington could be the start of some new energies. The change will have to occur one day. If not, we will be burning coal again. And we got to start the transition immediately.

And the cost of risk of nuclear is not present with renewable energy. And the cost of renewable energy will decrease with production. The changeover to new power sources will create tremendous new employment opportunities if it’s approached with the intent to become a world leader in the field.

And Darlington on the Lake is a good location for wind, solar, LGs for biomass. It could be a new-age Darlington.

In closing, last week my son watched a documentary, “Hiroshima, The Day After”. He told me that he was quite shocked to see the injuries of these people after the event.
He said knowing that the Japanese
were bombed, he explained, but the injuries, the
skid damage, burns and lesions and the damaged
faces, he said, that’s exactly how I appear to him
when I was suffering the worst stages of my
exposure to uranium radiation.

I guess, the moral of this is, I
would -- I expect would be that we don’t need
atomic weapons to initiate and achieve the same
horred results as we have managed to inflict the
same damage on our own people while using nuclear
for peaceful purposes. Thank you.

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

Questions from Panel members,
Madam Beaudet?

--- QUESTIONS BY THE PANEL:

MEMBER BEAUDET: Thank you, Mr.
Chairman. I would just like to check with you a
few things.

When you were talking about the
Monarchs that you found dead and with the pipe not
being located properly on the beach, where exactly
was that, in Clarington?

MR. RUDKA: No, that was in Port
Hope. It’s a drainage pipe that comes down from the welcome site down into the lake near Brant’s Creek. That would be in -- it’s near actually Port Hope really.

MEMBER BEAUDET: And you did report it and nothing was done?

MR. RUDKA: No, I took this as a personal observation. I’ve reported some other things in the past that I’ve seen and nobody has really done much about it. One was a leak at a tank down in Port Granby and it wasn’t taken very seriously.

So, no, I just noted it, knowing the pipe was going to go out into the lake. And, well, I’ve told you about it today, ma’am.

MEMBER BEAUDET: What would be -- you said that there should be a new vision of how to approach people that are affected in their work.

We had earlier, some representative of unions and I would like to hear a little bit from your experience what would you expect to see? I mean we have to progress obviously.

MR. RUDKA: Well --
MEMBER BEAUDET: What would be your recommendations?

MR. RUDKA: I think it has to go beyond the unions. A union unfortunately can be corrupt in a small town it seems to be.

My union, what they did is when they found out I was sick, they dismissed me, so I have no union covering me and I’m basically on my own.

MEMBER BEAUDET: Thank you. Thank you, Mr. Chairman.

CHAIRPERSON GRAHAM: Thank you, Madam Beaudet. Mr. Pereira?

MEMBER PEREIRA: Thank you, Mr. Chairman. You raise a number of points about impacts of the nuclear industry along the lake and you talk -- one of the issues that you talk about is contamination in the lake and the particular -- the levels of tritium in the lake.

I believe in the Environmental Impact Statement, Ontario Power Generation makes estimates, a level of tritium in a lake, a true operation of the reactors in lake -- Ontario Power Generation reactors in the lake, can OPG quote the levels that -- that are predicted in the lake?
(SHORT PAUSE)

MEMBER PEREIRA: While that is being checked on I’ll make a couple of other observations and go to another question. We spoke earlier this afternoon to -- or rather we had an interventions this afternoon from the Power Workers Union and the Canadian Nuclear Workers Council, which is an umbrella body for unions in the nuclear industry right across Canada. And we asked them about health effects and the -- what had been reported by their workers. And -- and they came up with a reasonable assurance that they saw no evidence of major problems in -- with health of workers.

Now, yours is a special case, but certainly they didn’t come up with reports of persistent problems or chronic problems. That’s the impression they gave us, but we took that at face value. So we are pleased to hear from you about your real experience and, you know, which is different from what they said. But you say, which union were you with? Were you with the Power Workers Union or some other union?

MR. RUDKA: No, I was with another union, I was with the Steelworkers Union.
MEMBER PEREIRA: Okay. I see.

Going on from there then, I’d like to go to the CNSC and the comment on health impacts at doses up to 50 millisieverts per year the Canadian radiation dose limit is 50 millisieverts per year and I believe it’s 100 millisieverts in five years; is that correct? So could you comment on what level of protection that gives in terms of health impacts?

DR. THOMPSON: Patsy Thompson for the record. As you mentioned the Radiation Protection Regulations do set limits for workers at 50 millisieverts per year or 120 -- or 100 millisieverts over a five-year period. These limits are based on epidemiological studies that have been done and reviewed by international experts showing that for chronic exposures of radiation, that health effects are not observable in relation to the general population.

So the dose limits are established at a level where health effects are not expected. And in addition to that, the CNSC regulations require that radiation protection programs be in place at each facility and one element of the Radiation Protection Program is a requirement -- an
ALAR program. And that has resulted in doses of nuclear energy workers in Canada that are well below the dose limits, either the five-year limit or the annual limit.

MEMBER PEREIRA: Just to follow up on that then, in the United States for workers in the nuclear industry, what are the dose limits? Are they comparable or are they lower?

DR. THOMPSON: Patsy Thompson for the record. We’ll confirm tomorrow, but if I recall well, the dose limits in the States and in many other countries, are based on the ICRP recommendations so they would be the same as the Canadians regulations, but we will confirm tomorrow.

MEMBER PEREIRA: So what you’re saying is they’re likely to be 50 millisieverts per year?

DR. THOMPSON: Patsy Thompson, that’s correct, but we will confirm tomorrow.

MEMBER PEREIRA: But you will confirm tomorrow.

CHAIRPERSON GRAHAM: Go back to -- Mr. Pereira, I think I’ll give that an undertaking so we can track everything. That will be

INTERNATIONAL REPORTING INC.
undertaking 42 for tomorrow on the comparisons with the U.S. on dose rates.

MEMBER PEREIRA: Well, it’s probably a good idea to do the U.S. and the international community so maybe ICRP would be a good thing to quote and -- and the U.S. to go along with that, just to put it in context, the intervention we’ve had today.

CHAIRPERSON GRAHAM: And number 42.

MEMBER PEREIRA: Thank you. Can we go back to Ontario Power Generation, do you have the tritium in Lake Ontario as resulting from the operation of nuclear generating stations on the lake?

MS. SWAMI: Laurie Swami. We did actually provide this information in IR-276 for reference. There’s a long explanation of the calculation that was done, but for the NND itself, we estimate it to be in the range of four to five becquerels per litre. And this is assuming the bounding numbers in terms of the releases from the NND. But when you compare that to the total from the lake, we estimate it somewhere in the range of seven becquerels per litre and of course this is
versus the current expectation of 7,000 becquerels per litre or the new standards which would be 100 becquerels per litre. So that -- that’s what we compare to.

MEMBER PEREIRA: Thank you. I am aware that you did supply it and in response for an information request for the full explanation of the basis for your calculation, but I wanted to put it on the record in the context of this intervention. And there are many other interventions that are coming up in which the concern about tritium releases into Lake Ontario are raised again and again and the concern on the part of the public that these -- this station and other stations are posing a hazard to the health of Canadians who use the lake for recreation and drinking water.

So I think it’s good to put it on the record and so I may ask you the question again. So -- just to make sure that for the participants who are in the hearing room at the time, they hear it -- the intervention and they hear what the applicant is -- assessment indicates. Thank you very much for your patience. Thank you, Mr. Chairman.

CHAIRPERSON GRAHAM: Thank you
very much. Now, we’ll go to the floor and I will
ask -- first of all, I’ll ask OPG if they have any
questions of Mr. Rudka.

MR. SWEETNAM: Albert Sweetnam, no
questions.

CHAIRPERSON GRAHAM: Thank you.

CNSC, do you have any questions for Mr. Rudka?

DR. THOMPSON: Patsy Thompson, no
questions, thank you.

CHAIRPERSON GRAHAM: Government
departments, federal/provincial? If there are not
then we will then go to intervenors’ questions and
I have one and Derek Kelly of FARE. Oh, I guess
I’ve got two. So Derek Kelly of FARE, you take the
microphone first, sir, and then -- and then we have
Joanne Bull after that from Lake Ontario
Waterkeepers. Mr. Kelly?

--- QUESTIONS BY THE INTERVENORS:

MR. KELLY: Thank you, Mr. Chair.

Derek Kelly of Port Hope Families Against Radiation
Exposure. I have two questions. The first
question is regarding the U-236 in urine.

Understanding that apparently all Canadians and I
suppose then nuclear workers would have that, I’m
wondering where we could find the studies that have
sampled and shown that there is that uranium --
type of uranium in urine?

And the other question is how is
the Alpha or how are Alpha particles and Beta
particles measured in nuclear workers? Thank you.

CHAIRPERSON GRAHAM: Thank you.

Your first question, I go to Dr. Thompson. Where
can this information be obtained? Is it on the
internet somewhere or a website somewhere or is it
something that we maybe get from Health Canada;
maybe you could explain to Mr. Kelly.

DR. THOMPSON: Patsy Thompson for
the record. From the gentleman’s question if -- I
have the impression that I probably -- my answer
was misleading. What I said was that there is
uranium naturally occurring in urine and that the
levels measured in Port Hope were low and in the
range of natural background concentrations. I did
not say that U-236 was part of that mix. I said
that the ratios measured were near the detection
limits and were uncertain.

CHAIRPERSON GRAHAM: Is there a
study or something that he can refer to or the
public can refer to?

DR. THOMPSON: I will check --
Patsy Thompson. I will check with the -- the Health Canada -- our Health Canada colleagues for the information and I’ll look through the information that staff had given the Commission when the results were reported to the CNSC.

CHAIRPERSON GRAHAM: Thank you.

That will be undertaking 43.

And when can you come back?

Tomorrow or the next day; when would be the most opportune time so Mr. Kelly can refer back to this?

DR. THOMPSON: Patsy Thompson. We will try to reach our Health Canada colleagues tomorrow morning and when we resume the hearing tomorrow afternoon we’ll be able to provide a timeline.

CHAIRPERSON GRAHAM: Good. We’re going to try and do undertakings every morning, so we’ll put it on the agenda for Friday morning for a report back.

Mr. Kelly, you had one other question and I’m sorry. I apologize I forget what?

MR. KELLY: Hello. It was regarding how nuclear workers are monitored for Alpha and Beta particles particularly if they’re inhaled or ingested.
CHAIRPERSON GRAHAM: Thank you. That -- there’s been a lot of debate and a lot of information out regarding the incident at Bruce, and perhaps Dr. Thompson could explain how that is -- how that is measured.

DR. THOMPSON: Patsy Thompson for the record. The staff is -- has put together a document that explains the different methods of measuring dose for workers for different types of -- of exposures, different types of radiation. That document is being finalized and will be presented to the commission, I believe, at the May commission meeting. But I will -- we have a good draft document. I’ll get the information, and we’ll be able to provide the information for alpha particles and beta particles in the next couple days.

CHAIRPERSON GRAHAM: Thank you.

Joanne Ball -- or Bull, I’m sorry.

MS. BULL. Thank you, Mr. Chair. I just wanted to confirm in response to the discussion about Tritium in Lake Ontario, that the concerns that have been raised are not limited to Tritium, they are -- there’s a long list of contaminants that are emitted to the lake,
including benzene, ammonia, and hydrazine, so just
to confirm in light of that comment. Thank you.

(SHORT PAUSE)

CHAIRPERSON GRAHAM: Dr. Thompson, do you want to respond to that?

DR. THOMPSON: My apologies. We were wondering if you had given an undertaking number for the dosimetry, and we were trying to see if -- would that be number 44 or --

CHAIRPERSON GRAHAM: I didn’t give it an undertaking because you said it was going to be presented to the Commission in May, and it wasn’t going to be ready until then I didn’t think, so that was to a regular commission meeting, this -- we would like to have it, but perhaps if it’s not going to be ready until May, we can still get an undertaking number, and then if it’s not ready, it will be ready and it will be posted so that everyone will have the benefit. So I will give it Undertaking Number 44.

DR. THOMPSON: Perhaps, sir, if I could clarify. The document is nearly final and will be submitted to the Commission, but what I was proposing is that we extract from that document the part that relates to alpha and beta and provide it
in the next couple of days. We could do that.

CHAIRPERSON GRAHAM: That’s clarifying. Thank you very much. Ms. Bull, we didn’t get your question. We apologize because we’re working on that Undertaking Number 44. Perhaps you would like to re-put it.

MS. BULL: Thank you, Mr. Chair. It was actually just a clarification. Thank you.

CHAIRPERSON GRAHAM: Thank you very much. And, Faye Moore, I think you’re the last one that has questions regarding this intervention.

MS. MOORE: Thank you. I wanted to make a comment, if I can, about the UMRC testing, that one of the key responses from Health Canada and CNSC was that the test results were the same as you would find in people across Canada.

CHAIRPERSON GRAHAM: Could you put it in a question, please?

MS. MOORE: And they were referring to the levels and it’s the type of uranium that’s really critical, and that’s what Dan Rudka is referring to as well is the content in the urine.

One of the concerns that has come
to us as a health committee over the years from employees and former employees of Cameco and Ziratec, now Cameco too, is the -- the lack of monitoring around health as employees age and then go into retirement.

And some people have thought they observed early onset of disease, and there are times when the workers don’t have benefits. So I don’t have specifics on that, but one of my questions would be with OPG is whether they do health monitoring of their employees, those who are in the workforce, how closely they do that?

Do they do isotopic monitoring of their urine to detect if ratios start to become a problem or if there is anthropogenic material coming in the urine, and if they follow people into retirement and really monitor over the long term because some workers retire when they’re 60, and if they develop cancer and die by the time they’re 62 and there’s a trend of that, that’s something we really should know about. Thank you.

CHAIRPERSON GRAHAM: OPG, you care to respond, please?

(SHORT PAUSE)

MS. SWAMI: Laurie Swami. First
of all, I think I could answer part of the question with respect to how we monitor. The question, I believe, was do we look for anything in urine, and -- and I know that Dr. Thompson will be providing an overview of how dose is monitored for employees. However, I could mention that we have several different techniques that we use for monitoring exposures.

We use urinalysis, we use fecal sampling, and we use whole body -- whole body counting techniques, devices that employees step into to monitor their exposures. Those are used to calculate and ensure that the health effects are understood and the dose assignments are correct. And that’s a requirement of our programs, and they must fulfil that as nuclear energy workers.

I’m not speaking specifically to any particular radionuclide. It covers a wide range.

From a health monitoring perspective, I can’t comment on that today. I can verify. I don’t believe we have an extensive program of monitoring based on radiation exposure at this time, but I need to confirm that, and I can take that as an undertaking. We will have, I
believe, someone here tomorrow from our health physics department who can speak to that more clearly.

CHAIRPERSON GRAHAM: Thank you.

That will be Undertaking Number 45. Thank you very much, Ms. Moore. I realize tonight has been a lot of discussion around Port Hope, and I’ve been very lenient and the hour is getting long and I still have another presenter, but I certainly will hear Ms. Lawson and Mr. Haskill. One question each. If you would honour that, I would appreciate it.

MS. LAWSON: I’m puzzled because of Ms. Thompson’s statement about the uranium in Port Hope citizens being similar to the levels of uranium because it’s well-known with -- that in Port Hope there is no barrier and Norm Rubin of Energy Probe together with a CNSC senior staff member together measured that the levels citizens were exposed to in Port Hope were six times the levels a citizen around a nuclear generating plant would be exposed to.

So I don’t understand Ms. Patsy Thompson’s reference to uranium in Port Hope citizens being the same as the -- the measurement being the same as anyone else. It makes no sense.
to me, Mr. Chairman.

CHAIRPERSON GRAHAM: Thank you very much for your comments on the record. Mrs. Haskill. I said Mr. Haskill. Is it a Mrs. Haskill, or have I got this not -- there’s one more person has asked to speak. Mr. Haskill, you’ve waved your hand that you’re not. I know -- we get our information here via Blackberry, and if there’s none, thank you very much. That ends your presentation, Mr. Rudka, and thank you very much for coming. Always give you the time that you need, and thank you very much. Tonight you don’t have to travel as far, but safe travels.

With that, we will go to the last presenter of the evening, and that is in PMD 11-P1.178, and it’s Ms. Howarth. I hope I pronounced that correctly. Oh, it’s just Howarth. Okay, I -- thank you very much. The floor is yours, ma’am.

--- PRESENTATION BY MS. HOWARTH:

MS. HOWARTH: Thank you so very much for the opportunity of presenting to you tonight. And I’m going to talk about the unnecessary need of new build of nuclear reactors at Darlington, which is under review.

For my energy needs to be
satisfactory. That energy must come from the safest, the most economical, and above all, come from the most sustainable source available. The number one action before looking for energy -- any energy sources, is unquestionably the one which holds the most common sense and logic. And that is investing in conservation and energy efficiency. This means obtaining the desired temperature, let’s say for heating my home or a building using the least amount of energy possible, and this can be done with insulation, so -- you know, we don’t have to be looking at a facility necessarily.

So I’ll be speaking on a few points. 1. Nuclear energy is the most expensive and the most dangerous form of energy. 2. Conservation, energy efficiency, hydro, and renewable energy will meet our energy needs for Ontario. Renewable is doable in Ontario, and economically viable. Lake Ontario is needed for human life, and global warming solution is not nuclear power due to the greenhouse gas emissions from nuclear’s lifecycle.

So number 1, nuclear energy is the most expensive and most dangerous form of energy. Nuclear energy is the most expensive and dangerous
form of energy. OPG’s environmental review only
takes into consideration some of the aspects of
nuclear and ignores important, pertinent costs as
well as the dangers. The costs of building new
nuclear will have -- which have been ignored, will
become the responsibility of provincial ratepayers,
federal taxpayers, and future generations. In
fact, these ignored costs are in reality a form of
subsidy to the nuclear industry.

There are costs and risks that
have been underestimated or ignored by OPG in the
environmental impact statement or by the Ontario
government. These negatives will be addressed
under the following headings. I’m going to look at
projects costs, construction cost overruns,
accident insurance and storage of radioactive waste
cost. So the project cost.

The Ontario Power Authority is
Ontario’s electricity planning agency. In 2005
they advised the Ontario government that rather
than having energy generated from green energy
sources, building new reactors would be more cost
effective. On that information OPG was directed to
start an environmental review by the Ontario
government. So in 2009 the Ontario government
became aware that the purchase of new reactors would be over 26 billion. This is after OPA’s claim in 2005 that the cost of new reactors would be about $6 billion, so the government therefore, halted the purchase of new reactors.

So don’t energy suppliers have to look at all these extra costs? The nuclear industry must include all costs, past and present that are attached to the building of nuclear power plants, as well as including the decommissioning of a plant and the storage of waste.

Construction cost overruns. The nuclear industry has a history of cost overruns when it comes to building reactors, even on today’s energy bills there is an amount being charged every month to pay for reactors, which were built decades ago. It is unquestionable -- unconscionable, sorry, to be giving a quote and being awarded the contract when the nuclear industry can turn around and change billions -- and charge billions more due to the inability or even the unwillingness to give accurate estimates as to the true cost. I don’t believe any other energy producer is allowed to charge and collect for construction cost overruns. The nuclear industry must be forbidden to do so as
well.

Accident insurance. There is the real and distinct possibility of nuclear accident. An accident would cause environmental damage and personal injury, including death and most likely all of these. The nuclear industry is not able to get insurance and only assumes partial responsibility in case of an accident. So the federal government and the taxpayers, as well as the ratepayers, and possibly future generations will assume all costs above that minimum amount.

Another word for others being held responsible for the costs incurred from the nuclear accident again is subsidy to the nuclear industry. This subsidy or perk is not available to any other energy producers. Providing their own insurance is a cost that must be included in the cost of new reactors. The federal government must revamp the liability legislation for the nuclear industry, and the industry must be accountable for their own mishaps.

Then there’s storage of radioactive waste costs. The costs of decommissioning a nuclear power plant and storage of radioactive waste is a cost which much be
included when calculating the price of building a nuclear reactor, and the price of energy to the consumers. If OPG has done this -- has not done this, then it must, otherwise this is again giving the industry an unfair advantage over safer, greener and less expensive types of energy production.

Also if this is done, it is in fact another -- if this is not done, it is in fact another subsidy to the nuclear industry, which again, it’s the taxpayers and the ratepayers, and even future generations, which will be on the hook for.

This -- I noticed somebody did this last week. I guess this way. How do I get this to show, there it is. Okay. So this shows the cost of efficiency and conservation, which is three cents a kilowatt hour, and this is combined heat and power, six cents. And this is renewable power, which could come from Quebec, because they have to supply to Ontario, so nine to three cents an hour -- a kilowatt hour, and new nuclear is 21 cents. So it is -- it’s definitely the most expensive.

So in summary, you are the members...
of the panel and you must not approve new reactors before OPG can prove that conservation and energy efficiency have been maximized, which they absolutely have not; that nuclear is cheaper than any other green energy producers; that there will be no construction cost overruns, and if there are it’s the nuclear industry that will assume full responsibility for these. That accident insurance will be the full responsibility of the nuclear industry, storage costs and radioactive wastes will be included in the upfront costs of nuclear. And the lifecycle of nuclear is not green and it is greenhouse gas emitting. So all information must be made public and able to be assessed and scrutinized.

The second one I’m going to look at is the conservation, energy efficiency, hydro and renewable energy, which will meet our energy needs. It is mindboggling to think that in 2011 I’m being asked to believe that not more can be done to improve conservation and energy efficiency. The number 1 action again -- I’ve said it before, before looking at energy sources, the action which holds the most common sense and logic is conservation and energy efficiency. So insulating
public, insulation and insulating public and
commercial buildings and homes, for example, would
have a tremendous input -- impact on reducing the
amount of energy, which is required.

In short, I would not need to use
anywhere near the same amount of energy that I
would -- that I use now to maintain the same
temperature, let’s say, that I use now.

Now, wind power in Ontario and the
hydro from Quebec can produce 100 percent renewable
energy 24/7, just that on its own. When the wind
is stronger, water can be stored in reservoirs in
Quebec, and then when the wind is light, this water
can be released to generate power.

In addition there is energy from
utilizing combined heat and power, where both heat
and electricity could be produced from one energy
source. So nuclear is untenable, irrational and
unsustainable energy choice.

So renewable is doable in Ontario
and economically viable. The first step towards
100 percent renewable energy is to maximize
conservation as I said before, and energy
efficiency. I can’t stress that enough, that
that’s where we really have to be putting some
effort into and it’s not happening, i.e., the insulation so that we use less energy to obtain the desired temperatures or whatever that we want.

It is economically wise and prudent to transition to renewable energy. Along with all the negative impacts of nuclear energy pointed out throughout this presentation and others, renewable energy would cost 12 to 18 percent cheaper than building a new reactor at Darlington and creates 27,000 jobs because that always comes up.

These and some of the findings by Pembina Institute and Canadian Environment Law Association and Green Peace in their study of August, 2010 -- so it’s very clear there -- OPA found over 15,000 megawatts of renewable energy either in the planning or development phase. In a 20-year period the integrated power supply plan envisioned half that amount. So even knowing this, the growth of green energy remains blocked for two reasons. In order to ensure space for nuclear energy, renewable energy is capped at 5,312 megawatts over the 20 years -- over the next 20 years or less than eight percent of the electricity supply mix.
Wind development will come to a halt because the IPSP are accommodating the building of new nuclear and this will be over 50 percent of the supply mix. So, you know, there’s no place on the grid for -- for the renewable -- the green energies, but the jobs are there and more jobs.

So it is the obligation, I think, of this panel to follow the federal law and policy on sustainable development. This law requires a public assessment of the need, impacts or cost effectiveness of building new reactors at Darlington and this must take place before the project proceeds. This panel must demand a public assessment before approving the project. The people of Ontario deserve the opportunity to objectively examine alternatives to nuclear. But in 2006, the Ontario Government secretly passed a regulation exempting its electricity plan from a provincial environment review. So people have been robbed of this opportunity.

Lake Ontario is needed for human life. Now, fresh water is a finite and essential resource. It is a life-sustaining and critical resource. It is needed for human life and there
are no ifs, ands or buts about it. What is dumped
in Lake Ontario must be closely watched and this is
our source -- as this is our source of drinking
water.

I support the letter by Lake
Ontario Waterkeepers, which I’ve read and it’s
dated the 8th of October, 2010, which was sent to
the members of the joint -- project Joint Review
Panel, that’s Debra Myles and Kelly McGee. Yeah,
they would have received the letter. So the letter
explains the critical importance of fresh water in
the world and how Lake Ontario is the 14th largest
lake in the world -- fresh-water lake in the world.
The lake borders Canada and the United States with
a total of 1,000 kilometres of shoreline. It is
linked to the Great Lakes through the Niagara River
and it drains through the St. Lawrence River to the
Atlantic.

That letter explains very well the
importance of the lake and how the health of Lake
Ontario is essential to the ongoing health and
prosperity of Ontario and the entire Great Lake
region. It serves as fish and wildlife habitat; it
is the space for transportation and recreation. It
is absolutely critical as it provides the drinking
water for millions of Canadians and Americans.

The letter also points out that the lake is threatened by a number of sensors, most linked to the failure and respect -- to respect and nurture it. It points out that the OPG prefers the once through cooling water option and of any alternative, this would be the most damaging impact on the lake.

Also the proposed infilling -- infilling of 40 hectares of the lake has been inadequately justified and alternatives have not been sufficiently considered in the environmental impact statement. The Waterkeepers state that:

"The following important information is missing from a hydro-geological review and that this is where serious structural concerns regarding the incomplete and premature EIS and the uncertainty that characterized the public comment period. Waterkeepers submits that the EIS is incomplete and cannot form the basis for a valid
environmental assessment
decision.”

I don't know how much time I have left so I’ll go to the -- global warming solution is not nuclear power due to greenhouse gas emissions from the nuclear lifecycle. So the major reason for my opposing the replacement of Darlington nuclear power station with a new facility is because of the greenhouse gas emissions.

I’ve heard claims by the nuclear industry that nuclear is green energy and it is not greenhouse gas emissions emitting, but this is false. There are many stages in the lifecycle of nuclear that are greenhouse gas emitting such as the mining of uranium, the construction of the plant, the decommissioning of the reactors and the storage of nuclear waste. A nuclear power plant demands all these stages for new construction to even take place so there cannot be a nuclear power plant without all these stages and it would be deceptive to ignore them.

The facts are not new. In the winter of 2008, there’s an addition of Pacific ecologists and I think the submission I gave you
has a link, and there’s an article that’s called, “Nuclear Power is Not Pollution or Emission Free.” This is the way that they state it:

“Lifecycle emissions occur throughout plant construction, operation, uranium mining and milling and decommissioning. Nuclear is not pollution or emission free; every step of the nuclear fuel cycle, mining, development, production, transportation, and disposal of waste, relies on fossil fuels and produces greenhouse gas emissions. A complete lifecycle analysis shows generating electricity from nuclear power emits 20 to 40 percent of the carbon dioxide per kilowatt hour of a gas-fired system when the whole system is taken into account.

So again, nuclear power is greenhouse gas emitting which is causing,
“Climate change, construction of new nuclear reactors can be considered nothing short of criminal.”

So in conclusion, it just seems that based on, again, common sense and logic, the building of the new reactors at Darlington must not be approved and OPG -- until OPG can demonstrate that they are needed without a doubt; cheaper and more effective and most cost-effective compared to other energy options; do not produce greenhouse gas emissions in their lifecycle, including mining of uranium and the storage of the waste.

With most of the negative points being strongly against the approval of building new nuclear reactors in Ontario, for one, I will be terribly disillusioned with the political process if nuclear new build is allowed to proceed. And I’m not the only one. I put a large number of my recreational hours in volunteering and I meet -- the people that I meet that are opposed to nuclear power, and they’re -- like, they’re afraid of it and rightly so.

I can assure this panel that the majority of the public are fearful of new nuclear.
Do not disillusion people more than they are, refusing the approval of new nuclear will show an understanding of what people are saying and how they are feeling. This is an opportunity to turn the negative public tide and put us on the path to an environment and economical sustainable future.

I wrote this about three weeks ago and actually, you know, people work full time and it’s so hard to find when you -- when all your daytime hours are in paid work, to find time. So I hadn’t reviewed it, but I’m pleased with it.

But I wrote something this morning just quickly. I put the other two things are -- the government standards and the OPG standards, I think, are far too low.

The minimum standards that are quoted in the -- in the studies, many of them are outdated, and they leave out critical pieces.

Dr. Caldicott, she spoke here last week, and she’s a physician. She’s not hired by any industry. And all she has to speak from is the care of patients and the care of people.

And she brought up the tritium, which is in the water and in the air and penetrates everything. Only gold could encase it, that could
-- wouldn’t penetrate.

And then I believe it was plutonium that settles in the testicles.

There are no safe levels.

So that’s one point that I wrote today.

And the other one -- this one is not covered in any studies. There’s no mental health studies, and they’re virtually nonexistent.

Stress is an accumulation of -- an accumulation of stresses is what leads to clinical depression, which is a mental illness.

Fluoride in the drinking water causes stress.

Having children with these huge university loans to pay causes stress. Then those students not finding jobs causes stress.

People that have children are losing their jobs. That causes stress.

All of -- and family members and friends coming -- diagnosed with cancer, that causes stress.

Now, that’s an accumulation of stress, and that is -- those accumulation of stresses, this is what causes mental illness,
depression, which leads to mental illness.

But this -- when I was here last week when Dr. Caldicott spoke, you can’t -- nobody tackles the mental stress, but we have them every day in our lives. We all have them.

So the common sense -- and I spoke to my sister this morning. She lives in Peterborough. And she told me my brother-in-law -- that a co-worker, who is 39 or 40 -- and the man took on a more -- a job with more responsibility.

He has two young children, a wife.

And my sister was telling that this man was falling apart, and he had to take time off work. He was supposed to come back on Monday, but he didn’t.

And my brother-in-law, along with his duties, he’s taken over covering for this man because he’s worried about this man and his concerns.

Now, I’m to -- we’re to tell this man that tritium is in his -- on top of all the things that he’s probably concerned about -- and I think that he is suffering probably some kind of depression.

Thank you. I’m almost finished.
The tritium in the drinking water and the air which penetrates everything, you tell him that.

Tell him also that plutonium -- or whichever one of those chemicals comes from nuclear -- will land in his -- will rest in his testicles. That’s enough to send somebody, anybody, to wherever, the loony bin. So these stresses, they’re real.

No, there are no studies on mental health because it’s too real.

So you are the members of the panel, and I know you’ve got common sense, and we’re all living the same thing.

So I’m really -- I know you’ll make the right decisions because it’s just common sense and logic, sense of logic.

Thank you.

CHAIRPERSON GRAHAM: Thank you very much for your intervention.

I know that you said it was written three weeks ago.

Many of the things that have been -- have been answered and covered over the last seven or eight days of the hearings.
But there’s one thing before I go to my colleagues.

You held up a card. Is that an OPG card with regard to the price that’s there? Because we had information given us the other day that nuclear power was five-and-a-half cents, and I’m just wondering, is that an OPG card that you held?

MS. HOWARTH: No, it’s not an OPG card.

CHAIRPERSON GRAHAM: Where --

MS. HOWARTH: This is from Ontario Clean Air Alliance.

CHAIRPERSON GRAHAM: Okay.

MS. HOWARTH: And actually -- okay. I have a more recent one even, so -- because the studies keep getting updated.

But it’s the renewable, the conversation -- because I think the conservation is the same.

CHAIRPERSON GRAHAM: Okay.

MS. HOWARTH: I’ll give you this, or I’ll send it to you somehow.

CHAIRPERSON GRAHAM: No, that’s okay.
I just wanted clarification whether it was OPG --

MS. HOWARTH: No, Ontario Clean Air Alliance.

CHAIRPERSON GRAHAM: -- because the evidence that we had given us was different.

Mr. Pereira, do you have any questions?

--- QUESTIONS BY THE PANEL:

MEMBER PEREIRA: Thank you, Mr. Chairman.

Thank you for your presentation.

Much of what you presented has been presented, as Mr. Chairman has said, like, much of it presented by Lake Ontario Water Keeper in particular, the health and the lake. And many of those issues -- impact on the aquatic fish and wildlife habitat has been covered before, fish and fill -- the lake and fill and the impact on drinking water in the -- one of the previous interventions, we talked about tritium in the -- in the lake.

I’d like to go to one of your closing lines.

When you said the majority of the
public are sceptical and fearful of new nuclear -- and that’s quite a sweeping statement.

Ontario Power Generation has done much in a of consultation with the public in preparing for this project.

I’d like them to comment on what they -- what they found from their consultation with the public.

MR. SWEETNAM: Albert Sweetnam for the record.

I’ll ask Donna Pawlowski to respond to this question.

MS. PAWLOWSKI: Donna Pawlowski for the record.

The -- we’ve summarized the results of the communications and consultation program in our technical support document, which was submitted in September of 2009.

And we found that there was, particularly in the Municipality of Clarington, quite a bit of community support for the project.

And, yes, there were individuals who had, as we’ve heard here, concerns about energy policy in Ontario and whether the weight that was given to renewables versus the weight that’s given
to nuclear, but -- so that was definitely a concern that was raised by people that came to our sessions.

But overwhelmingly, I’d say particularly within the Municipality of Clarington, there’s support for the project to proceed.

MEMBER PEREIRA: Did you do any consultation beyond Clarington, more widely -- the Durham Region?

MS. PAWLOWSKI: Yes. Our -- Donna Pawlowski for the record.

Our consultation program covered the whole regional study area, which extended to the west, which was into the eastern portion of the City of Toronto, and as far east as Port Hope and Cobourg and as far north as Peterborough. And to the northwest I think we got up into Markham.

So the total regional study area was covered.

MEMBER PEREIRA: And the results were similar, were they?

MS. PAWLOWSKI: The results were consistent.

I think the further away we got from the host communities, Pickering and
Darlington, the less familiar people are with nuclear. And less familiar people would say, why are you even coming up to talk to us way up here in Markham? And -- but generally consistent yes.

MEMBER PEREIRA: Thank you. We did have the Deputy Minister of Ontario Energy come to speak to us early last week. And he outlined the province’s policy on generation options. And so that policy was developed by the Government of Ontario in consultation, so that’s the way we started off the week.

But I’d like to go now back to Ontario Power Generation to comment on the cost of nuclear, cost overruns, and the cost justification of the project in broad terms.

MR. SWEETNAM: Albert Sweetnam for the record.

In terms of the costs of new nuclear, as the Assistant Deputy Minister said when he appeared, he indicated that there was a range, and that range is derived from two ongoing plants in the US.
For the Ontario situation, we cannot actually define the exact costs of new nuclear because we have not completed the procurement process. We do not have -- we have not selected a technology. We do not have vendor on board.

But the intention is to come within the range of what is available competitively.

As the Premier has said and the Minister has said consistently, we will obtain the best deal for the rate payer.

We will proceed with nuclear at any price. We will proceed with nuclear at the right price for the Ontario rate payer.

MEMBER PEREIRA: Thank you.

Thank you, Mr. Chairman.

CHAIRPERSON GRAHAM: Madam Beaudet?

MEMBER BEAUDET: Thank you, Mr. Chairman.

I have two points.

The first one is -- I don’t think there are page numbers on your document, so we’ll go by section, section 3, the last paragraph where
you mention that the Ontario Government secretly
passed a regulation exempting its electricity plan
for provincial environmental review. I would like
to know exactly what you mean here?

MS. HOWARTH: I need to have
that -- I didn’t give it a -- what can I say? An
index to that, but I can get you something.

MEMBER BEAUDET: You mean
that there is no reference and you’ll get a
reference?

MS. HOWARTH: That’s right.

MEMBER BEAUDET: Thank you. The
other ---

CHAIRPERSON GRAHAM: Madam
Beaudet, do you want an undertaking on that?

MEMBER BEAUDET: Yes, I suppose
so, please.

CHAIRPERSON GRAHAM: Yes, we will.
We will give that number 46 for an undertaking for
Ms. Howarth to provide the references. When would
you be able to provide that?

MS. HOWARTH: Monday, yeah.

CHAIRPERSON GRAHAM: That’s
satisfactory. Thank you very much.

MS. HOWARTH: Okay. Thank you.
MEMBER BEAUDET: My second point, you were referring in your last comments about the stress and mental health and I believe Ontario Power Generation has looked at the mental health with respect to Darlington. And I would like to have a brief comment on that please?

MR. PETERS: John Peters, for the record.

I think the concept that we have explained before the Panel is that the health assessment was done using the World Health Organizations definition of health and health effects and we have assessed as a result of that, physical health, mental health and social well-being.

And there’s a wonderful table in the EIS in Section 5 of the human health portion that walks through and points out, for example, the assessment of some of the kinds of concerns that were raised in this presentation are covered off under such things as feelings of personal health, a sense of personal safety, satisfaction with your own community, added towards too -- towards the Darlington project and its site.

Potential traffic, nuisance
effects other things may come associated with the project. And a sense of traditional use and spiritual activities that are particularly identified with Aboriginal communities.

We develop these ideas not by ourselves not in isolation, but through studies with members of the community, particularly in response to the Durham Nuclear Health Committee, whose public members were very interested over the last two environmental assessments in developing these concepts and then having us go out and undertake surveys and interviews with members of the community, professional people in the community and social organizations to understand how these dimensions of public health and personal well-being could be -- could be assessed and understood as they relate to the project.

MEMBER BEAUDET: When you looked at the aspect of feelings of personal health, were there any concerns brought about -- from people that felt working -- or living near a nuclear site would bring them concerns about their health?

MR. PETERS: John Peters, for the record.

I’m going to just remind you that
Donna Pawlowski has described the nature of those studies. What I found particularly interesting over the years that we worked on this was that we did individual community meetings as we’ve described many, many times.

And we tracked comments by members of the public who came to those meetings and we’ve recorded them in our reports and we find as Donna has indicated, a broad understanding and acceptance and a lack of concerns close to the plant and its function if we think of the well-informed community.

As you get further away, there are perhaps less information, but the distance changes people’s concerns as well.

What we do see in the public attitude research was a more objective measurement on a periodic basis is that attitudes do not change dramatically. And there is a broad ground-swell of acceptance of nuclear and no fear of -- no major fears.

There is a percentage of people who are always going to be concerned and fearful of this particular technology and we accept that as part of a normal business practice that we have to
be responsive to and address on an ongoing basis.

Perhaps Donna may have more specifics that she wishes to add.

MS. PAWLOWSKI: Donna Pawlowski, for the record.

I’ll just add in the socio-economic affects, TSD in the appendix. We have the Public Attitude Survey where we, on a regular basis, check with people on their attitudes towards personal and community well-being.

And consistently -- particularly in the local study area, we had 78, 80 percent of the surveyed population rating their personal health as excellent or good. And -- and that’s with the full knowledge that they live beside a nuclear power plant and aware of the -- and just aware of being beside a nuclear power plant.

MEMBER BEAUDET: Thank you.

Thank you, Mr. Chairman.

CHAIRPERSON GRAHAM: Thank you.

I think Ms. Howarth had one question.

MS. HOWARTH: Again, it’s the -- about people agreeing with nuclear and mental health and that aspect. I could do a survey as
well and I don’t think the figures -- well, I know
that the figures wouldn’t come that way -- work out
what these people have -- the OPG have come up
with.

I live to the east of Yonge Street
in downtown Toronto and it’s different when people
live in an area where work is -- this is their job
and they’ve invested in a home, it’s very hard for
them to say that the industry that supports that,
that they’re going to speak against it. That’s
just a -- a natural.

If the people were told that they
had other options as being replaced, I don’t think
that that’s happening enough. I really, really
don’t. And I’m speaking here as a -- I didn’t have
to come all this way from downtown Toronto because
I don’t -- I don’t live that close to the plant,
but it’s -- there are other ways.

And, again, the survey that I
would do would not be showing -- because I know
what my neighbours say and they don’t live near
nuclear. And do they like it? They want an
alternative. That’s what they what to hear, but
it’s -- nobody is going to speak about the
alternative or tell them that it’s not available.
Then it’s just not going to -- they’re going to say, oh, okay.

CHAIRPERSON GRAHAM: Thank you very much for your observation.

The process now, is we go to the floor and I’ll go to OPG. Do you have any questions to the intervenor?

MR. SWEETNAM: Albert Sweetnam, for the record.

We have no questions, but I have two comments based on issues that were raised by the intervenor. One of the things that was raised was a comparison of emissions of -- and that the emissions should really be taken across a lifecycle.

We have that information. That information was submitted in the EIS. Now, I’ll just put it on the record quickly.

For nuclear, and again this is lifecycles, CO2 emissions for nuclear, between four and 30.5 grams of CO2 per kilowatt hour. For wind, between 4.5 and 65.5 grams CO2 per kilowatt hour. Hydroelectric, between 6.5 and 25 grams CO2 per kilowatt hour. Solar, between 46.5 and 372 grams CO2 per kilowatt hour. Natural gas, between 325
and 560 grams CO2 per kilowatt hour. And coal fire
plants, between 960 and 986 grams CO2 per kilowatt
hour.

The other clarification I would
like to give because the statement was made about
passing on the cost of nuclear to the next
generation is that when a decision is made to
proceed with nuclear, it’s based on a LUEC, which
is a levelized unit electricity cost.

And that cost includes the actual
cost of the plant, the cost of operating the plant,
the cost of disposing the waste, the cost of
decommissioning, the owners costs, the land cost,
any transmission cost associated with that plant.
That’s all rolled into the LUEC and the decision is
based on the LUEC.

And the LUEC that was provided by
the Assistant Deputy Minister encompasses all of
those costs, so when you see a cost stated on a
LUEC basis, it’s a complete cost for nuclear,
including the future liabilities.

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

CNSC, do you have any questions?

DR. THOMPSON: Patsy Thompson.
No thank you.

CHAIRPERSON GRAHAM: Thank you.

Government departments, I see none.

Then we have two questions from the floor, and I’ll close the -- close it with that. And the first one is Louis Betrand. Mr. Betrand, the floor is yours for a question, please.

--- QUESTIONS BY THE INTERVENORS:

MR. BETRAND: Yes, thank you -- is it on? Yes, thank you, Mr. Chairman. I’m new to these proceedings, and I wonder if it would be possible through you to ask a question of Ms. Pawlowski of OPG?

CHAIRPERSON GRAHAM: Put your question. I’ll see where it should go.

MR. BETRAND: Fair enough.

CHAIRPERSON GRAHAM: To the Chair.

MR. BETRAND: Thank you. Louis Betrand for the record. Through the Chair, many politicians in these host communities of Pickering, Clarington, and the Regional Municipality of Durham have, on many occasions, hardly endorsed the nuclear industry. And I’m wondering if the applicant is aware of any survey that was done by
the municipalities that would then empower the municipal -- the elected officials to speak on behalf of that population. Thank you.

CHAIRPERSON GRAHAM: Thank you. I will direct that to OPG, but it was discussed the other day about polls and about polling. I think that’s what your question was, and one mayor had said that he ran his election on that and got elected and that was his poll, but, OPG, would you care to respond further?

MR. SWEETNAM: Albert Sweetnam for the record. The politicians are empowered to speak for the people based on the elections. This is how we work in a democracy, and we just had municipal elections, so I think the politicians that have spoken at this hearing are empowered to speak for the people that elected them.

CHAIRPERSON GRAHAM: And OPG is not the politician.

MR. SWEETNAM: Albert Sweetnam for the record. We try not to be.

CHAIRPERSON GRAHAM: The one other question is from Karen Calvin or Colvin.

MS. COLVIN: Karen Colvin from FARE, Families Against Radiation Exposure, and I’d
like to thank Ms. Howarth for raising the issue of stress and how it may affect the nearby residents, and I’ll give my own life history as an example.

I -- I grew up in this neighbourhood. In fact, I live -- I -- my grandparents had a farm approximately a mile east of here, and I lived there in 1975 until 1980 and made the conscious decision to leave the family farm to move away from the Darlington plant.

And I was never, ever questioned by anyone from OPG, and I would just wonder how many other people are in my position that have done the same thing and have just cleared out because they didn’t want to raise their children within a few close kilometres of a plant that would emit dangerous radiation? Thank you.

CHAIRPERSON GRAHAM: Thank you for that question. I’m not sure whether OPG can respond to how many that didn’t answer that had left, but if you want to try -- the question, I think, would be hard for them to answer. Do you have another question, and then we have to call it.

MS. COLVIN: Well, I could -- I could follow up by saying that from the time I grew up, this community is entirely altered, and I know
that there was some questions last week as to whether some farmers were warned from OPG that they should not use or sell their produce. You know, it used to be a rural community, you know, with farmers who took pride in taking care of their land, and now, you know, it’s much altered. And I think that the Darlington plant has a lot to answer to that.

CHAIRPERSON GRAHAM: We’ve had Health Canada here last week and had questions with regard to similar questions which you’re referring to. I -- I don’t think there’s anyone here tonight unless Dr. Thompson could respond, but I -- pardon me? OPG may want to respond. I’ll go to OPG then.

MS. SWAMI: Laurie Swami. We have not issued any -- any warnings or suggestions to local farmers that there would be restriction on consumption of their garden products or any of the products from the local farms.

We have a local farmer on our property who leases our land currently. We will, as a result of this project, be requiring to terminate that lease with him for the sole purpose of using the land for the -- as we know and we’ve talked a lot about the site layout, we’ll be using
that land for the purpose of -- of the soil
stockpiled to the north northeast corner, so we’ll
be using that land.

There are other farms in our area.
We do sampling, as we’ve talked about, the
radiological -- excuse me -- the Radiological
Environmental Monitoring Program. We monitor
product. We have that result. It’s part of our
dose calculations, but it’s also submitted in data
through the REMP reports that we’ve talked about
extensively.

And so we do have a program for
monitoring produce, water, milk, honey, many, many
different consumable products, and we have not had
any reason to issue a restriction or a warning.

If that was to take place, it
would be done by the provincial government. They
have the -- and we’ve described that in our
documentation how and when that would take place
through the emergency response. But, again, we’ve
never had a reason to do that.

CHAIRPERSON GRAHAM: Thank you
very much. With that, I’m going to ask -- I’m
going to thank you. You have -- you say you have a
little question, and I’m also going to ask you to
leave that chart that you had with our secretariat at the back when you leave, and you can have a very small question. On the microphone and identify yourself.

MS. HOWARTH: That the OPG -- one of the OPG people quoted that the mayor had the approval of the citizens because they -- they voted for him and that was -- that was his poll. This is -- I think this a sign of how the public is feeling. Often it’s around 50 percent that don’t vote because they’ve lost faith in the system because they feel that they’re not looking -- the politicians aren’t listening to them. So that’s my comment on the poll.

CHAIRPERSON GRAHAM: I don’t want to get into a philosophy of why people don’t vote, so with that, thank you very much for your travel, for your coming here tonight, and safe travels back to Toronto.

MS. HOWARTH: Thank you.

CHAIRPERSON GRAHAM: With that, I guess we don’t have anything else other than the fact that -- do we have something else? No. If that’s the case, tomorrow at 1:30. We’re adjourning. Tomorrow morning we do not sit, but
we’ll sit tomorrow afternoon and evening. Thank you everyone for coming and participating. I now adjourn today’s panel.

--- Upon adjourning at 9:49 p.m.
CERTIFICATION

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.

____________________________
Alain H. Bureau