

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**

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Ms. Jocelyne Beaudet  
Mr. Ken Pereira

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(ii)

**ERRATA**

**Transcript:**

**Page 86, line 5**

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

**Should have read:**

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

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**Page 245, line 11**

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

**Should have read:**

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

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**Page 249, line 18**

18   on a periodic basis is that attitudes do no change

**Should have read:**

18   on a periodic basis is that attitudes do **not** change

(iii)

TABLE OF CONTENTS / TABLE DES MATIÈRES

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

1 Courtice, Ontario

2

3 --- Upon commencing at 1:30 p.m./

4 L'audience débute à 13h30

5 MS. McGEE: Good afternoon. Mon  
6 nom est Kelly McGee. Welcome to the public of the  
7 Joint Review Panel for the Darlington New Nuclear  
8 Power Plant Project.

9 Je suis la co-gestionnaire de la  
10 Commission d'examen conjoint du projet de nouvelle  
11 centrale nucléaire de Darlington.

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

21 Opportunities to either -- of  
22 either questions to a presenter or a brief  
23 statement at the end of a session may be provided,  
24 time permitting. Denis Saumure of the Panel  
25 Secretariat staff who has been with us on the

1 podium since the beginning is being replaced today  
2 Pierre-Daniel Bourgeot.

3                                 We have simultaneous translation;  
4 headsets are available at the back of the room.  
5 English is on channel one. La version française  
6 est au poste deux.

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

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

20                                 CHAIRPERSON GRAHAM: Thank you  
21 very much, Kelly, and good afternoon everyone.  
22 Welcome again to these hearings. And I want to  
23 welcome everyone that is here today, but also those  
24 that are joining us on live link -- by audio live  
25 link and on the internet. My name is Alan Graham

1 and I am the Chair of the Joint Review Panel. The  
2 other members with me here today on the panel are  
3 Madam Jocelyne Beaudet to my right and Mr. Ken  
4 Pereira to my left.

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

14 MS. MCGEE: Thank you. In it's  
15 statement of decision on procedural and preliminary  
16 matters, the Joint Review Panel committed to  
17 providing hearing participants the opportunity to  
18 submit written final comments. Hearing  
19 participants will have 20 days notice to submit  
20 written final comments to the panel and notice  
21 advising hearing participants of the exact due date  
22 for the receipt of final comments will be provided  
23 by the panel at the appropriate time. Final  
24 comments that do not meet the submission deadline  
25 will not be accepted.



1 proceed with those so for those that -- that are  
2 interested, hopefully this gives everyone a chance,  
3 again, to -- to be able to be involved and provide  
4 their comments.

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

10 --- UNDERTAKING STATUS:

11 MR. BOURGEOT: Before I go through  
12 the list, I'd like to inform that the undertaking  
13 list will now be on the CEAA registry. It will be  
14 posted from now on. In the matter of undertaking  
15 18 to OPG pertaining to projected off-site  
16 groundwater tritium concentrations due today. Are  
17 you ready to speak to those?

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

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

23 MS. SWAMI: Laurie Swami. So we  
24 have the information and it will be provided at the  
25 next break to the Secretariat as per the normal

1 process. This undertaking was to provide projected  
2 off-site groundwater tritium concentrations around  
3 the Darlington facility and OPG has provided a  
4 model -- the results of our modelling exercise  
5 which will provide the contour lines for the  
6 tritium concentrations. That will be provided in  
7 the submission that we're providing. It does show  
8 the increased, off-site concentrations with various  
9 contours, 100 becquerels and -- and decreasing with  
10 distance from the site. We anticipate that the  
11 concentrations that we're predicting are fairly  
12 conservative based on the fact that it's using the  
13 model that we have used traditionally throughout  
14 the studies as well as in our normal modelling  
15 exercises under the REMP program and that we would  
16 anticipate the concentrations will be much lower  
17 than those predicted at the off-site locations.

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

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

25 MR. SWEETNAM: Albert Sweetnam for

1 the record. We had indicated an extension -- yes,  
2 Friday, sorry, because we have to redo 16 drawings  
3 and they're taking a little longer than we thought.

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

7 MR. BOURGEOT: Thank you. CNSC in  
8 the matter of undertaking 20, worker tritium  
9 exposure and monitoring methodologies in Canada and  
10 bio-analysis results of tritium monitoring. It's  
11 my understanding that this document has now been  
12 posted on the CEEA registry. In the matter of  
13 undertaking --

14 CHAIRPERSON GRAHAM: Just one  
15 moment, is that correct?

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

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

24 DR. THOMPSON: Patsy Thompson. We  
25 are in the final stages of putting the document

1 together so we should be able to file it with the  
2 Secretariat either later today or early tomorrow.

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

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

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

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

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

24 So with that, we'll start today's  
25 session. There's a presentation from Power

1 Workers' Union as outlined in PMD11P1.147 and  
2 PMD11P1.147(a).

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

6 Welcome. And the floor is yours.

7 --- PRESENTATION BY MR. MCKINNON:

8 MR. MCKINNON: Thank you, Chair.

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

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

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

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

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

23 We will focus our presentation  
24 today on the issue at hand, that being the  
25 environmental assessment for the construction of

1 new units at Darlington.

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

8 The Power Workers' Union has  
9 represented the vast majority of the skilled  
10 workers in Ontario's electrical, generation,  
11 transmission, and distribution systems for over 60  
12 years.

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

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

19 The PW coordinates the  
20 International Nuclear Workers' Network.

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

25 Our organization is in full

1 support of nuclear power being part of the  
2 electrical energy mix.

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

7                   Our experience with Canadian  
8 reactors is extensive.

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

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

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

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

24                   We are confident that a new plant  
25 at Darlington with new state-of-the-art

1 technologies will have even less impact on the  
2 environment than the older models.

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

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

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

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

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

24                   We not only work in the plants,  
25 our families live in the host communities.



1                   This is why we feel it is  
2 appropriate in these submissions to approach  
3 nuclear safety from the workers' perspective.

4                   We have, over the years, worked  
5 with OPG to create mechanisms and forums to address  
6 and improve workplace safety issues and our  
7 concerns.

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

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

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

21                   I mentioned before this is a  
22 mature relationship. OPG relationships with  
23 construction unions that will supply the thousands  
24 of skilled workers needed to build the new facility  
25 have also been in place for more than 60 years.

1                   The PWU and the construction  
2 unions have good working relationships with OPG and  
3 with each other.

4                   The parties have developed unique  
5 processes to resolve issues expeditiously.

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

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

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

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

23                   In conclusion, we in the Power  
24 Workers' Union base our support for this project on  
25 the history of the current nuclear plants in

1 Ontario.

2                                   They have operated safely for over  
3 40 years.

4                                   This is excellent technology that  
5 has continuously improved without causing any  
6 significant, detrimental effects to workers, the  
7 public, or the environment.

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

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

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

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

22                                   We encourage the panel to approve  
23 this project expeditiously and to have the CNSC  
24 issue and prepare the site license so this project  
25 can proceed for the benefit of the people of

1 Ontario.

2 We would be pleased to answer any  
3 questions you have.

4 And all of that is respectfully  
5 submitted.

6 CHAIRPERSON GRAHAM: Thank you  
7 very much, Mr. McKinnon.

8 The procedure we follow, and  
9 you're probably familiar with that, we go to panel  
10 members first, then to other participants.

11 And I'll start off with Mr.  
12 Pereira.

13 Do you have any questions to the  
14 Power Workers' Union?

15 --- QUESTIONS BY THE PANEL:

16 MEMBER PEREIRA: Thank you, Mr.  
17 Chairman.

18 I am pleased to read in your  
19 submission about the consultation that OPG has  
20 engaged in in taking the project forward and that  
21 the Power Workers' Union participated in  
22 consultations with OPG. What were the primary  
23 concerns raised by Power Worker Union members with  
24 respect to this new project?

25 MR. MCKINNON: Through you, Chair.

1 No --

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

5 MR. McKINNON: Don McKinnon.

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

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

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

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

24 MEMBER PEREIRA: Thank you. In  
25 your assessment of the project ahead, what health

1 and safety challenges do Power Worker Union members  
2 foresee in the site preparation and construction  
3 phases given that over those two phases there will  
4 be a number of contracted staff and a transient  
5 workforce on site. Are there any concerns that you  
6 might have about what needs to be done to ensure  
7 health and safety?

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

17 MEMBER PEREIRA: Thank you. My  
18 final question. In your presentation you spoke  
19 about the experience Power Worker unions have on  
20 nuclear sites, working primary with CANDU reactors,  
21 and it's been a very positive -- you said it was a  
22 very positive experience. What do you foresee will  
23 be the challenges if Ontario Power Generation and  
24 the Ontario government choose to go with a  
25 different technology, something other than CANDU?

1                   MR. MCKINNON: We would see no  
2 reason to go with anything -- Don McKinnon. We  
3 would see no reason to go with anything but CANDU,  
4 but -- since it's performed so well. But to answer  
5 your question, I think on the conventional side,  
6 workers are readily adaptable. On the -- on the  
7 other side, on the radiation nuclear side, the  
8 operating side, there would be some time to train  
9 and re-skill workers, but the time leads are long  
10 in construction of a nuclear plant. That would  
11 give us ample time to set up that training rigor  
12 and have those people prepared to operate a plant  
13 of another technology.

14                   MEMBER PEREIRA: Thank you, Mr.  
15 Chairman.

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

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

20                   I'd like to look with you on the  
21 procedure or the protocol you have when -- it says  
22 that when there's an incident that is brought up  
23 and it's not resolved, or an issue or concern, it  
24 has to go first to the joint policy committee on  
25 health and safety. And then eventually to, you

1 recently put in place TWU or OPG Nuclear Corporate  
2 Health and Safety Committee.

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

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

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

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

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

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

23                   MEMBER BEAUDET: Thank you. I'd  
24 like OPG to comment on that, please, if you have  
25 any comments.

1 MS. SWAMI: Laurie Swami. We work  
2 with our PWU and society represented staff through  
3 the joint health and safety committees as they have  
4 spoken about. I can't speak specifically to the  
5 Darlington situation, I'm not involved in that  
6 particular joint health and safety committee, but  
7 we work with them. They bring issues to the table  
8 for resolution. It's PWU's society and management  
9 represented at those forums. They're brought to  
10 the table, management is at the table to help with  
11 resolution of any issues that are raised. That  
12 management rep reports in to the management team at  
13 the facility where the -- where the incident or  
14 concern may be raised, and it gets addressed  
15 through that process.

16 We have many processes for  
17 addressing concerns that employees raise. One of  
18 them is through just dialogue between the worker  
19 and their supervisor, which we like to use as the  
20 first -- first method for resolving any issues that  
21 could come forward. We also have the station  
22 condition record program where an employee can  
23 raise an issue in confidence if they choose to, to  
24 be addressed by the management team. And those are  
25 reviewed on a regular basis, daily at the sites, to



1                   To answer your question, we have  
2 no done that as yet. We will be interested, as  
3 will everyone else, on what comes out of that at  
4 the end, but I think it's premature at this stage  
5 for us to engage without accurate information.

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

10                  MR. MCKINNON: Through you, Chair,  
11 Don McKinnon.

12                  I think it's absolutely essential  
13 that we as workers in the nuclear industry, along  
14 with the industry, learn whatever lessons are --  
15 are there to be learned from any such event.

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

22                  When we look at -- and this is in  
23 the section of your submission that refers to the  
24 licence to prepare a site. I'd like to check with  
25 you here if you refer only to applicable regulatory

1 expectations in terms of doses to worker because I  
2 believe when we look at the PMD of CNSC, which for  
3 the licence to prepare a site, is 11-P1.2(b) on  
4 page 80, they look here only in terms of radiation  
5 protection, but other aspects like fitness for  
6 service, safety analysis is considered here, and  
7 not within the scope of the PMD, of the -- the one  
8 for the licence to prepare site.

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

18                   MR. MCKINNON: Don McKinnon,  
19 through you, Chair.

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

23                   MEMBER BEAUDET: Would it be in  
24 the OPG documents or in -- in what you refer to the  
25 PMD that came from CNSC?

1 MR. McKINNON: We're referring to  
2 the CNSC conclusion.

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

5 CHAIRPERSON GRAHAM: Dr. Thompson?

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

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

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

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

23 MEMBER BEAUDET: But the first  
24 paragraph when you say, "Applicable regulatory  
25 expectations," you refer here to doses to workers?

1                   MR. MCKINNON:  When we refer to  
2 the health and safety aspect, we're referring to  
3 OPG's ability to carry out that activity.

4                   MEMBER BEAUDET:  Thank you.

5                   CHAIRPERSON GRAHAM:  Thank you,  
6 Madame Beaudet.

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

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

1 workers could be trained?

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

13 As well, part of the EPC contract  
14 requires the early delivery of a simulator, so the  
15 operators would be hired well in advance of the  
16 delivery of the simulator, so they would already  
17 have been partially trained before the simulator  
18 comes on site. Several of the -- with the -- the  
19 exception of the CANDUs, if it were an EPR and an  
20 AP1000, they -- they already have simulators that  
21 are operating either in Europe or in the U.S. They  
22 already have sites that are under construction that  
23 we can send staff to for training. So the training  
24 actually, as part of our plan, in terms of the --  
25 the staff that are finally -- will operate the

1 site. These staff start to come on board  
2 approximately one year after we sign the contract,  
3 so well in advance of the actual commissioning and  
4 operation of the plant. So it's a very, very  
5 extensive training program that is administered by  
6 the EPC contractor, but supported by OPG.

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

14 MR. MCKINNON: Nothing to add  
15 really other -- Chair, Don McKinnon -- other than  
16 we have experience with moving people from one set  
17 of units to another. They -- they do differ. We  
18 have experience with training people who come to us  
19 from the street, if you will, or out of school to  
20 the level required to make them qualified to  
21 operate these units. We have every confidence that  
22 given the lead times and the training technologies  
23 available to us that we could, in fact, train  
24 people to the degree required if we needed to. We  
25 don't believe we should go that route, that CANDU

1 would make the most sense, but we could be prepared  
2 if we had to be.

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

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

11 MR. MCKINNON: Yes, we are.

12 CHAIRPERSON GRAHAM: Thank you.  
13 With that, we'll now go to -- to questions from the  
14 floor, which in the way we -- we do it, sir, is,  
15 first of all, we go to OPG. And do you have any  
16 questions for the Power Workers Union, Mr.  
17 Sweetnam?

18 MR. SWEETNAM: Albert Sweetnam, no  
19 questions.

20 CHAIRPERSON GRAHAM: CNSC, do you  
21 have any questions?

22 DR. THOMPSON: Patsy Thompson, no  
23 question.

24 CHAIRPERSON GRAHAM: To government  
25 agencies and departments that may be here, whether

1 they be federal or provincial if there are none, I  
2 see none, then we will go to intervenors, and my  
3 understanding is we have no intervenor questions  
4 from the floor.

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

8 (SHORT PAUSE)

9 CHAIRPERSON GRAHAM: The next  
10 presenter on deck is the Canadian Association of  
11 Physicians for the Environment, as outlined in PMD  
12 11-P1.83 and P1 -- pardon me, 11-P1.83A, and I  
13 understand Mr. Forman, who is the Executive  
14 Director, is doing the presentation today on behalf  
15 of the Canadian Association of Physicians of the  
16 Environment -- or for the Environment. So, Mr.  
17 Forman, the floor is yours.

18 --- PRESENTATION BY DR. FORMAN:

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

23 Ever since the discovery of  
24 radioactivity at the turn of the last century, it's  
25 been recognized that ionizing radiation has a

1 deleterious impact on human health. Radiation  
2 damage can affect any part of the cell and can  
3 therefore interfere with many cellular processes,  
4 most importantly, damage to the genetic material of  
5 the cell can lead to cancer, birth defects, and  
6 hereditary illness.

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

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

20                   There's continuing risk of  
21 accidents or meltdowns, of course, which could  
22 release large amounts of radioactivity, such as  
23 occurred at Three Mile Island, of course Chernobyl,  
24 and as we're seeing the developing unfolding in  
25 Fukushima. Much of the long-lived radioactive

1 contamination we are spreading into our environment  
2 now is essentially permanent and irreversible.

3                   So doctors are concerned about the  
4 health risks associated with the nuclear power  
5 industry at all stages, from uranium mining to the  
6 efficient process in reactors to radioactive waste.

7                   So to begin, uranium mining  
8 contaminates air, water, and soil. Crushing  
9 radioactive rock produces dust and leaves behind  
10 fine radioactive particles subject to wind and  
11 water dispersal, radon gas, and potent lung  
12 carcinogens is, of course, released continuously  
13 from the tailings in perpetuity.

14                   Drilling and blasting can disrupt  
15 and contaminate local aquifers, water used to  
16 control dust and create slurries for uranium  
17 extraction becomes contaminated.

18                   Tailings contaminants can  
19 potentially leak, leach, or fail releasing  
20 radioactive material into local waterways. Various  
21 organisms can, of course, transport radioactive  
22 material away from contaminated sites. These sites  
23 remain radioactive for many thousands of years, and  
24 will remain unsafe for most human purposes as well  
25 as being a source of continuing contamination for

1 surrounding populations.

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

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

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

22                   One of the potential health risks  
23 of this industry is the highly toxic spent fuel  
24 produced by the reactor. To date, there's no truly  
25 safe way to dispose of the spent fuel, which

1 remains radioactive for, as we know, hundreds of  
2 thousands of years. Geologic storage, which  
3 consists, of course, of burying the waste deep  
4 underground is being considered but carries the  
5 risk of potential contamination of air and water  
6 and other as yet unknown risks. And, of course,  
7 even if we get the storage right for, say, the  
8 first 10,000 years, that does leave hundreds of  
9 thousands of years after that if there are leaks.

10                   So even if we get it right for the  
11 first part of time, there's still hundreds of  
12 thousands of years after that during which the  
13 highly toxic radioactive waste could be released  
14 into the environment.

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

1 was a very strong study.

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

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

13                                   Though there are relatively few  
14 Ontario studies on the subject, the Atomic Energy  
15 Control Board, AECB, undertook several studies in  
16 '89 and 1991, which found an increased prevalence  
17 of leukemia in children living near nuclear  
18 facilities. Another AECB study suggested a higher  
19 rate of childhood leukemia corresponding to higher  
20 radiation exposures of fathers, the largest risk  
21 associated with fathers who worked in uranium  
22 mining.

23                                   Of course, there's the Radiation  
24 Health In Durham Regional Study from four years  
25 ago, 2007. That was an ecological study. It

1 looked at a number of health outcomes in the  
2 vicinity of Pickering and Darlington, and the  
3 authors found statistically significant increases,  
4 as you know, compared to Ontario levels in combined  
5 cancers, breast cancer, thyroid cancer, bladder  
6 cancer, and multiple myeloma and also leukemia,  
7 which offers some further support for the KIKK  
8 study in Germany.

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

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

23                   Since much of the genetic denamge  
24 [sic] -- genetic damage is permanent and may be  
25 cumulative, we believe this becomes even more

1 crucial. And so family doctors are concerned about  
2 the public health risks of -- of every stage of the  
3 nuclear industry, and in conclusion, we argue  
4 against any new build at Darlington.

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

7 --- QUESTIONS BY THE PANEL:

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

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

15 DR. FORMAN: M'hm.

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

20 DR. FORMAN: M'hm.

21 MEMBER BEAUDET: Such an exposure,  
22 according to the International Commission on  
23 Radiation Protection Guidelines, would be expected  
24 to generate 3.2 excess cases of fatal cancer per  
25 hundred workers over a 40-year career. And then

1 you go on and say this is in contracts to whether -  
2 - contrast to whether industrial toxicology  
3 situation in which 1 in 10,000 to one million  
4 fatalities are considered acceptable.

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

9 DR. FORMAN: I don't think there  
10 would be an important difference.

11 MEMBER BEAUDET: No?

12 DR. FORMAN: Fatalities from  
13 cancer and general fatalities.

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

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

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

23 DR. FORMAN: Correct.

24 MEMBER BEAUDET: Can we have  
25 comments on this from CNSC, please.

1 CHAIRPERSON GRAHAM: Dr. Thompson.

2 DR. THOMPSON: Patsy Thompson for  
3 the record.

4 One of the issues with the  
5 statement as the -- the ICRP has developed risk  
6 factors for radiation exposures and have  
7 recommended dose limits, and the dose limits in  
8 Canada is 50 millisievert per year or no more than  
9 100 millisievert over a five-year period.

10 The vast majority of workers  
11 receive less than one to five millisievert per year  
12 of exposure. The calculation that is done is a  
13 calculation of -- if someone would receive that  
14 exposure over a lifetime and what would be the  
15 calculated number of cancers based on the linear  
16 no-threshold relationship and an exposure of 20  
17 millisievert during the 40-year period of work.

18 This is essentially a calculation  
19 from a model, but if we compare this calculation of  
20 three excess cancers per 100 workers, there have  
21 been numerous studies done internationally of  
22 nuclear energy workers where hundreds of thousands  
23 of workers have been followed for long periods of  
24 time and we don't see elevated risks of cancers in  
25 relation to the general population.

1                   So the -- in general, the ICRP  
2 framework is used for radiation protection and it  
3 is a framework that allows us to take protective  
4 measures. And the framework is accompanied by a  
5 requirement that's also in the CNSC regulations to  
6 keep doses as low as reasonably achievable, which  
7 is why doses to workers in the Canadian industry  
8 are very low.

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

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

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

25                   And these form the basis for

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

9 MEMBER BEAUDET: Do you have any  
10 comments to that?

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

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

24 CHAIRPERSON GRAHAM: Mr. Forman,  
25 each time, would you introduce yourself?

1 DR. FORMAN: Pardon me.

2 CHAIRPERSON GRAHAM: For the  
3 transcript. Yes, thanks.

4 DR. FORMAN: Sorry, Mr. Graham.  
5 Gideon Forman.

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

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

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

22 DR. FORMAN: With respect --  
23 Gideon Forman for the record, with respect to the  
24 Durham Region Study, the authors did find  
25 statistically significant increases compared to

1 Ontario levels in some cancers.

2 Rates of other cancers did not  
3 reach statistical significance. They are still  
4 worrisome, but they did not, so in some cases, yes,  
5 they reached statistical significance and in other  
6 cases, they did not.

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

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

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

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

24 DR. LANE: Rachel Lane, I'm --

25 CHAIRPERSON GRAHAM: Ms. Lane?

1 DR. LANE: -- the acting director  
2 of Radiation and Health Sciences Division in the  
3 CNSC. As Dr. Kyle spoke about the study that he  
4 was the principal investigator for, they looked at  
5 very many different causes of death, birth defects,  
6 cancer incidents and so on. As well, as  
7 information on the radiation exposures within the  
8 community.

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

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

23 They also did a study previously  
24 and these -- and this 1997 study was consistent  
25 with their earlier study. They also have done two

1 snapshots. One on cancer and one on birth defects  
2 in children in the community and all four of these  
3 major studies -- these studies that were done in  
4 Durham have consistent findings. Thank you.

5 CHAIRPERSON GRAHAM: Thank you.  
6 Madam Beaudet?

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

9 DR. FORMAN: Of course.

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

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

24 MEMBER BEAUDET: The reason I'm  
25 asking that is I would like to hear from you -- I

1 think some of these studies would probably need  
2 follow-ups and I was wondering if you have any  
3 recommendations to that effect?

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

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

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

19 That said, we're always happy to  
20 see more science done. Much of the Ontario  
21 science, as you know, has been ecological studies.  
22 We would like to see stronger studies, similar to  
23 the ones done in Germany, which are case controlled  
24 studies, so that would be a recommendation that  
25 more research could be done with a case control

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

10 MEMBER BEAUDET: Thank you.

11 Thank you, Mr. Chairman.

12 CHAIRPERSON GRAHAM: Thank you,

13 Madam Beaudet.

14 Mr. Pereira?

15 MEMBER PEREIRA: Thank you, Mr.

16 Chairman.

17 My first question is directed to  
18 the CNSC. We have received a number of  
19 submissions from different intervenors on the  
20 question of the impact of radiation doses on  
21 health, and a number of them take the position that  
22 even radiation at very low levels lead to risks of  
23 developing cancers and leukemia, serious illnesses.  
24 And then there's another school of intervention  
25 that say that at very low levels the beneficial

1 effects; and then the middle road which says  
2 there's no -- that there is a threshold below which  
3 those significant effects occur.

4                   Now, I know that you -- CNSC staff  
5 has an undertaking to provide us with some  
6 information on health studies that have been done  
7 in Canada over the last few decades on the impact  
8 of the nuclear industry on health of workers and  
9 the public. Will this submission you're providing  
10 to us address this issue of linear no-threshold, no  
11 significant effects, possible health benefits of  
12 low doses, because this complete -- the whole  
13 spectrum of possible outcomes. And for us as a  
14 panel, we'd like to be -- have a discussion of the  
15 full picture of what the different theories are.  
16 Is this something that will be covered in your  
17 undertaking?

18                   DR. THOMPSON: Patsy Thompson for  
19 the record.

20                   I will provide some details this  
21 afternoon, and since the undertaking isn't  
22 finalized, we can add information on the -- the  
23 different models and the different evidence for --  
24 for the things you're talking about. But  
25 essentially just to provide some information, there

1 are -- and some of the studies that have been  
2 quoted by the intervention 38, is to the effect,  
3 for example, talking about radium dial workers that  
4 were exposed to radium, those were studies that  
5 were done extensively because of the exposures that  
6 were found, and these studies have shown that for  
7 bone cancer, for example, there's a threshold dose  
8 of radium of 10 sievert, so it required a very high  
9 does to cause bone cancer. And that cancer was  
10 found to have a threshold for 10 sievert, so below  
11 10 sievert there was no bone cancer.

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

20                   So there's a variety of evidence  
21 that sort of says -- indicates that at the doses  
22 typical of -- the environmental doses around  
23 nuclear facilities, doses at which -- to which  
24 workers are exposed, are not related to health  
25 effects.

1                   There's also a lot of studies that  
2 are being done in the very low dose ranges to  
3 understand the mechanisms, the biological  
4 mechanisms of radiation effects, and those studies  
5 give essentially a range of results from effects of  
6 -- on cells that are not directly exposed. And  
7 there's also a number of studies that -- and we  
8 have some interventions where low doses appear to  
9 provide some protection for higher exposures.

10                   These are not unique to radiation.  
11 In toxicology this is a well-known phenomenon. It  
12 was first studied when people were looking at the -  
13 - stress related to heat shock, so heat shock  
14 proteins, where -- and it's been known for cadmium  
15 and other contaminants as well, at very low  
16 exposures you trigger a cell or an organism's  
17 ability to react to stress, so it's a stress  
18 response phenomenon, and it's known to increase  
19 cellular responses at low exposures. But the  
20 mechanisms are not well understood for radiation,  
21 and they're quite variable within individuals, and  
22 so generally internationally the consensus is that  
23 we are not able to rely on information that shows  
24 that low radiation exposures would be protective as  
25 a basis to protect human health and safety. So we

1 continue to go with the linear no-threshold  
2 relationship.

3 MEMBER PEREIRA: Thank you.

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

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

15 DR. THOMPSON: Patsy Thompson, for  
16 the record.

17 Yes, it is.

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

25 DR. THOMPSON: Patsy Thompson, for

1 the record.

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

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

13                                 DR. THOMPSON: Patsy Thompson.

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

20                                 MEMBER PEREIRA: Thank you.

21                                 Mr. Chairman, with your permission  
22 I'd like to suggest that when we receive the  
23 submission on the undertaking that we look to see  
24 whether we need a further submission as background  
25 to our review of the assessment.

1 CHAIRPERSON GRAHAM: Certainly.  
2 You're referring to the Undertaking 30, I think it  
3 is.

4 MEMBER PEREIRA: That's right.

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

9 DR. THOMPSON: Okay.

10 MEMBER PEREIRA: Okay. My next  
11 question --

12 DR. THOMPSON: Patsy Thompson.

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

15 MEMBER PEREIRA: That's right.

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

20 MEMBER PEREIRA: Thank you.

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

23 MEMBER PEREIRA: Next one on page  
24 35 of the intervention, there's a recommendation  
25 that more definitive studies be done to clarify

1 possible links between some serious illnesses and  
2 the residential proximity to nuclear facilities.  
3 That is your recommendation still, is it?

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

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

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

21 DR. THOMPSON: Patsy Thompson for  
22 the record.

23 We have considered recommendations  
24 such as these in -- in the past and we continue to  
25 review studies that are done internationally. In

1 terms of specifically looking at studies that are  
2 done using proximity as a proxy, our position and  
3 the position of most scientists in the area, is  
4 that proximity is not a good surrogate for  
5 exposure. And in our view the better studies are  
6 those that have those measurements for individuals  
7 that are part of the study. So we would continue  
8 to do studies that are more ecological when there's  
9 -- for example, in new situations as an indication  
10 of whether further studies need to be done.

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

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

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

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

24 MR. SWEETNAM: Alberta Sweetnam.

25 No questions.

1                   CHAIRPERSON GRAHAM: CNSC, do you  
2 have any questions for Mr. Forman?

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

5                   CHAIRPERSON GRAHAM: Thank you  
6 very much.

7                   Then government participants.  
8 There's several government agencies in the room; I  
9 don't see them. I think I have an indication that  
10 we have one intervenor from the floor or one that I  
11 know of right now. CELA, Ms. McClenaghan,  
12 you're -

13 --- QUESTIONS BY THE INTERVENORS:

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

16                   It's just a question with respect  
17 to the last exchange in terms of the usefulness of  
18 studies that use proximity as an indicator. And  
19 through you, Mr. Chairman, I believe Dr. Thompson  
20 was indicating that the preference is for studies  
21 with more definitive exposure information. But my  
22 concern is that residents in the area wouldn't  
23 normally be carrying the kind of dose measurement  
24 that the workers carry and so that kind of study  
25 would be quite difficult to ever imagine doing.

1 And so I'd like some comment on why proximity is  
2 otherwise not a reasonable thing to at least  
3 provoke further investigation and questions.

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

7 DR. THOMPSON: Patsy Thompson.

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

19 So that's why we're saying that  
20 doing more of the studies that have essentially  
21 shown no relationship is probably not the better  
22 study to do. The studies that would provide more  
23 robust information as indicated for members of --  
24 residents and communities, the exposure information  
25 is not readily available. However, a nuclear power

1 workers are exposed occupationally and generally  
2 live in the communities that -- where the nuclear  
3 facilities are located. And so we have those  
4 information for those individuals and we are able  
5 to track incidents of cancer and other diseases  
6 through time.

7 CHAIRPERSON GRAHAM: Ms.

8 McClenaghan, are you --

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

23 CHAIRPERSON GRAHAM: Thank you for  
24 your comments. Anything further? Any further  
25 comment you have, Mr. Forman?

1 DR. FORMAN: Just by way of  
2 conclusion, Mr. Chair. Gideon Forman.

3 I would beg to differ with some of  
4 the comments I've heard from CNSC. I think that  
5 there is significant evidence showing a  
6 relationship between proximity to nuclear  
7 facilities and increased risk of leukemia.  
8 Certainly the KIKK study does indicate that. As  
9 the CNSC knows, the German study found children  
10 below the age of five that lived within five  
11 kilometres of a facility had 119 percent increased  
12 risk of leukemia. Children living with ten  
13 kilometres had a 33 percent increased risk of  
14 leukemia. British studies that followed up also  
15 found increased risks of leukemia for children  
16 living within five kilometres of a facility. So  
17 there is evidence out there. We welcome more  
18 robust evidence of course, but there is, at this  
19 very moment, quite a bit of evidence showing a  
20 connection between proximity to nuclear facilities  
21 and increased rate of cancers, particularly  
22 leukemia.

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

1 your submission and your comments.

2 DR. FORMAN: Okay.

3 CHAIRPERSON GRAHAM: So the next  
4 we have is --

5 DR. FORMAN: Thank you very much.

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

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

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

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

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

19 Mr. Shier, the floor is yours;  
20 welcome.

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

22 USHER AND MR. LEVITT:

23 MR. SHIER: Thank you and good  
24 afternoon, Mr. Chairperson and Members of the  
25 panel. As indicated, my name is David Shier. I'm

1 the president of the Canadian Nuclear Worker  
2 Council.

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

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

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

17 So first of all, just a few  
18 comments about who we actually are. We are a  
19 council of unions across Canada. The unions that  
20 are involved in the nuclear industry from uranium  
21 miners, researchers, to the people that operate the  
22 power plants, the people that build the plants, the  
23 researchers and so on and so forth, and basically  
24 are -- the unions in Saskatchewan, Manitoba,  
25 Ontario, Quebec and New Brunswick is the basic

1 areas that we have at this time.

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

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

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

25                   First of all, we are in full

1 support of the application put forward by OPG for  
2 the new build and also support the CNSC and their  
3 agreement that this project will have no  
4 detrimental effects to the environment.

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

8 So by additional nuclear power,  
9 it's going to create more -- better effects for the  
10 environment.

11 The economy, it's going to be  
12 great for the economy of Ontario, for this area,  
13 and also we believe it's going to be good for  
14 Canada.

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

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

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

25 And workers and the public, the

1 public open houses, we'll make a comment on them  
2 that we had a lot of our members go to those public  
3 hearings. The feedback we had that a lot of them -  
4 - a lot of people there were asking good questions,  
5 getting some information.

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

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

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

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

1 facilities.

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

8                   We believe that there's no  
9 environmental impact.

10                   There has been some suggestion to  
11 the construction stage may create some areas there.

12                   And I would like to pass it onto  
13 Mr. Pat Widmeyer, the business manager of the  
14 Brotherhood of Electrical Workers who will have a  
15 lot of staff onsite during the construction stage.

16                   Pat?

17                   MR. WIDMEYER: Thank you.

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

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

25                   Our organization is a member of

1 both the Canadian Nuclear Workers' Council and the  
2 Ontario Building Trades Council.

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

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

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

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

21                   Moreover, the skills and  
22 experience of our organization ensure that a  
23 collective commitment to the best environmental  
24 standards of the nuclear industry are both  
25 maintained and improved upon during the life of the

1 project.

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

7                   Thank you.

8                   MR. SHIER: Thank you, Pat.

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

12                   MS. USHER: Good afternoon.

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

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

19                   As an executive member of the  
20 Canadian Nuclear Workers' Council representing  
21 Pickering nuclear on the council; an executive  
22 member of Women in Nuclear, Durham Region; a woman  
23 in trades employed in a non-traditional job; a  
24 resident in the vicinity; and an active steward for  
25 the Power Workers' Union, I appreciate the

1 opportunity to speak here today.

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

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

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

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

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

24                                From my experience, once people  
25 are more aware of the facts in regards to a nuclear

1 facility and get answers to their questions, they  
2 become supporters.

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

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

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

16                                I also have a daughter who is a  
17 highly-trained and experienced nuclear employee.

18                                She supports the new build and  
19 sees the future potential that the industry offers  
20 in social and economic benefits.

21                                I suggest, as well as my family  
22 and neighbours, that the high majority of the  
23 residents in Durham Region are in full support of  
24 this project and support the view that it will not  
25 create any detrimental effects to the environment.

1                   Speaking on behalf of the CNWC,  
2 we, therefore, fully support the new build at  
3 Darlington.

4                   Thank you.

5                   MR. SHIER: Thank you, Jo-Anne.

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

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

13                   My employer is Cameco Corporation.  
14 I've been there for 32 years, living in the  
15 community as well as working.

16                   And I've been union president now  
17 for 11 years coming.

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

25                   And we also believe that -- we're

1 confident that all health safety policies,  
2 regulations will be followed if there is a new  
3 build in Darlington.

4 Thank you.

5 MR. SHIER: Thank you, Chris.

6 Dave Shier for the record.

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

12 It's good for the economy and good  
13 for Canada.

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

23 CHAIRPERSON GRAHAM: Yes, you can.  
24 The floor is still yours.

25 MR. SHIER: Okay.

1                   CHAIRPERSON GRAHAM: You can  
2 discuss --

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

10

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

22                   At the working committee level, we  
23 asked OPG, we wanted to know how many radiation-  
24 related Workers' Compensation claims had gone in  
25 over the years from the nuclear sector, and I will

1 share that with you. There has been no claims gone  
2 forward for radiation-type diseases.

3                                 So that kind of a -- that, I  
4 guess, would be our study that the proof would be  
5 in the plants if there was an issue. As far as the  
6 offsprings of workers go, we have not heard of any  
7 -- any problems in that area and that the members  
8 that work in those plants are pretty forthright.  
9 If there's any issues, they are brought up through  
10 the health and safety committees and forwarded on  
11 to us.

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

20                                 Thank you again, and we're  
21 prepared to answer any questions you may have.

22                                 CHAIRPERSON GRAHAM: Thank you,  
23 Mr. Shier. The process now, we'll go to panel  
24 members, and Mr. Pereira, you have the floor first  
25 for questions.

1     --- QUESTIONS BY THE PANEL:

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

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

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

21                             The occupational health and safety  
22 issues, I mean, they're a major thing. There's  
23 slips, trips, and falls, but our safety  
24 performances are very high. We have some  
25 occupational diseases, for example, asbestos

1 because in some of the plants, some of the  
2 facilities, there's asbestos insulation and issues  
3 like that.

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

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

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

1 means they get those things addressed, but it is a  
2 hazard but it's a managed hazard ,and we feel the  
3 barriers are in place.

4                               MEMBER PEREIRA: Thank you. In  
5 recent years in the nuclear industry, not only in  
6 Canada but in other countries, there has been a  
7 concern about safety culture and the attitudes that  
8 everyone working in the industry should be  
9 promoting to ensure that nuclear plants stay safe.  
10 Does your council have any position on how safety  
11 culture can be promoted among your members?

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

21                              On the international perspective,  
22 as one of the previous speakers indicated, the  
23 Power Worker Union coordinates the International  
24 Nuclear Worker Union Network, so we have lots of  
25 contact with other unions across the world as well.

1 We know with our involvement with the IEA that they  
2 are pushing that, and we are starting to see more  
3 and more of that -- those effects across the globe.

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

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

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

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

23 MR. SHIER: Dave Shier for the  
24 record. It's a good question. We believe that the  
25 workforce is ready to take that on. It would be --

1 it's a changing work environment when you get into  
2 a construction thing, but we find that -- I think  
3 if the proper procedures are involved and if  
4 workers are involved, that the safety will be still  
5 number one priority and that, you know, it will  
6 move ahead good.

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

15                   MEMBER PEREIRA: Thank you, Mr.  
16 Chairman.

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

19                   MEMBER BEAUDET: Thank you, Mr.  
20 Chairman. I had a similar question on the -- with  
21 respect to the license to prepare a site to -- to  
22 see the safety on site for the preparation of the  
23 site and the construction. You mentioned in your  
24 written submission on page 4 that there has been no  
25 single radiation-related fatality among nuclear

1 workers. Did you get fatalities with respect to  
2 other accidents during construction or site  
3 preparation?

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

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

21 MEMBER BEAUDET: I grew up in a  
22 family that was in the oil industry, three  
23 generations of oil industry. And as a child, I  
24 remember, you know, this big poster. You know, of  
25 one million hours without an incident. And, you

1 know, it was a disaster when you had to stop one  
2 hour. When, you know, something would happen.

3                   And I was trying to -- it's  
4 important for us because it's not just reading the  
5 written submission, but to get the feeling from the  
6 ground, from, you know, the workers. Where are the  
7 problems that you would face on-site?

8                   I know on the television  
9 yesterday, they were saying for Quebec the accident  
10 rate has been reduced by -- from 137,000 a year to  
11 about 87 or something like that, which is a great  
12 improvement and most probably because the -- the  
13 protocols on-site have been reviewed and upgraded.

14                   And for you, I would like to know  
15 is there any area or any gaps, you know, in the  
16 forest of hazards that you have to face when you  
17 prepare a site or you construct that you would like  
18 to bring to us?

19                   MR. WIDMEYER: Pat Widmeyer for  
20 the record. The -- I wouldn't say there would be  
21 any major gaps at all. Obviously there is room for  
22 improvement in all processes that we use.

23                   We -- we certainly have an open  
24 and honest dialogue with the owner licencees and  
25 our member contractors that we work with on there,

1 so usually anything that -- any concerns that we  
2 have can be dealt with on the shop floor for the  
3 most part.

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

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

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

20 MEMBER BEAUDET: Thank you. My  
21 second point refers to waste reduction. There are  
22 some areas I believe where waste can be reduced,  
23 but I would like to hear a bit more. I think OPG  
24 in its documents says -- talks about incineration,  
25 crushing, whatever. I would like to hear a little

1 bit more in terms of what you feel should be  
2 improved in that field?

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

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

8 MR. SHIER: Dave Shier for the  
9 record. I know being involved with the Joint  
10 Radiation Protection Committee, I know there's  
11 programs in place to look at reductions in waste,  
12 and I think it has been reduced over the years.

13 There is some training workers  
14 that -- to try and eliminate that waste to start  
15 with. I think the best example we have on trying  
16 to reduce waste and things is not giving Bruce  
17 Power a plug, but the idea of shipping the steam  
18 generators to Sweden to recycle. I think that  
19 makes as a very major issue around reducing and  
20 recycling waste.

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

1 forward.

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

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

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

23 In addition to that, we've looked  
24 at means to prevent materials coming into our  
25 facilities, so this would look at materials that

1 come in boxes and Styrofoam and containers that  
2 when it's shipped to site for use.

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

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

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

21                   We work through employees to bring  
22 ideas forward to look at ways that they can be more  
23 efficient and we can be more efficient in terms of  
24 low and intermediate level waste, so I would say it  
25 is something that, as a business, we're all very

1 interested in making sure that we reduce that to  
2 the extent possible, aside from incineration and  
3 recycling programs where you remove small portions  
4 of radioactive material.

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

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

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

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

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

24                              MR. SHIER: Dave Shier for the  
25 record. We realize that, you know, cooling towers

1 and different means of cooling are being looked at.  
2 We haven't taken a real big position on it.

3 I would suggest from a union  
4 perspective, it would probably be a bonus. We  
5 probably have more jobs if we go to cooling towers  
6 and the different types of ventilation systems  
7 compared to the once-through system, so that may  
8 create some interest, but generally speaking, we  
9 haven't -- we've been kind of neutral on that.

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

23 MS. USHER: Jo-Anne Usher for the  
24 record. Yes, when I went -- a lot of our  
25 membership went to the hearings, the open-houses

1 and whatnot because I recognize people there that  
2 were there. And listening to the conversations  
3 about cooling towers and the questions that were  
4 asked of OPG, there was a real concern about  
5 cooling towers.

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

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

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

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

25                              CHAIRPERSON GRAHAM: No, that's

1 fine. We've had a lot of discussion back and forth  
2 with OPG and so on, but I wanted to get your  
3 membership's perspective and people live in the  
4 community, was it they didn't want to admit there's  
5 a nuclear power plant or was it the fact that you  
6 said birds hitting them or was there any concern  
7 that the fish are dying because of other things and  
8 so on, with regard to once-through cooling.

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

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

1 west than I have from Ontario.

2 CHAIRPERSON GRAHAM: Thank you  
3 very much, Mr. Shrier -- Shier, I mean to say.

4 Now, we have nothing more from my  
5 panel colleagues. We'll go to open the floor, to  
6 the various other people that participate in these  
7 hearings, and I'll first go to OPG. Do you have  
8 any questions, Mr. Shier?

9 MR. SWEETNAM: Albert Sweetnam, no  
10 questions.

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

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

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

24 The next on the agenda this  
25 afternoon -- into -- I'll move to the next

1 intervenor, which is Mr. Tom Lawson. And Mr.  
2 Lawson's intervention is a submission under PMD 11-  
3 P1.218. And, Mr. Lawson, we invite you up and  
4 welcome you here today to give us your  
5 presentation. And I don't think you have  
6 overheads, so if you'd just use the mic and proceed  
7 at your pleasure. Thank you very much.

8 --- PRESENTATION BY MR. LAWSON:

9 MR. LAWSON: You can hear me okay?  
10 My name is Tom Lawson. I'm a lifelong resident of  
11 Port Hope. My wife and I have lived in the shadow  
12 of the nuclear industry for half a century. We've  
13 been deeply involved in nuclear issues for many  
14 years, and we've made presentations at hearings on  
15 nuclear issues in Pickering, Toronto, Oshawa,  
16 Ottawa, Deep River.

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

22 I want to be a little different  
23 from the concerns that you've heard to date from  
24 the type of evidence you've been listening to. Our  
25 concern is not in the details of this game. In

1 fact we feel that it must be difficult not to lose  
2 sight of the woods for the trees, since there are  
3 so many of them. We're rather concerned about the  
4 suicidal direction our industrial civilization is  
5 taking, and the leading role the nuclear industry  
6 plays in that direction. The Darlington rebuild  
7 plan is a very significant part of the problem.

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

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

24 When I hear very, very low, a few,  
25 quite low, will bring, reduce leaking, sees no

1 affects, a number, more robust, workers are  
2 healthier, very slowly, very effective, these  
3 phrases I've listened to for the last few days, and  
4 I call that a kind of language bafflegab. To me it  
5 is fuzzifying. It sounds -- if you're not  
6 listening carefully, it sounds very compelling, but  
7 if you think very hard about what is being said,  
8 very often it doesn't say anything.

9                   I don't want to belabour the  
10 claims that the nuclear industry has made over all  
11 these years about being cheap, clean, safe,  
12 efficient. You've been hearing more of it all the  
13 time. I would just summarize the cheap side of it  
14 by saying it has never paid for itself. We  
15 taxpayers are still paying every month for the  
16 multibillion-dollar debt that nuclear ran up in the  
17 '90s. It's eating away at the very funds we need  
18 to develop relatively clean green technologies, but  
19 even that isn't the basis of the problem.

20                   I would suggest that -- I would  
21 ask, is there a person in this room who has ever  
22 done something to actually make the world a better  
23 place? Make mother earth healthier by, in any way,  
24 changing the basic way we're living, which to me is  
25 a standard of living that is not just

1 unsustainable, it is obscene.

2                                   Is the nuclear industry clean?

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

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

22                                   It has banked, like the -- as big  
23 tobacco tried to, on the difficulty of proof. Its  
24 so-called health studies, and I've studied many of  
25 them, especially in Port Hope, have, with all due

1 respect, been inconclusive by design. And its  
2 response to whistle-blowers has been to shoot the  
3 messenger rather than to address the source of the  
4 contamination.

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

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

19                   And one of the saddest things  
20 about the deep rock disposal -- the deep rock  
21 containment or whatever you want to call it, the  
22 geological repositories, is that we -- there is  
23 down there, where they intend to put this stuff,  
24 that area is teeming with life that we know very  
25 little about. We think of it as a dead zone. In

1 fact, with all due respect, I believe that it's  
2 almost impossible in the society we live in, to  
3 think of the earth as other than a resource to be  
4 exploited for our benefit to give us more economic  
5 growth as if that's going to save us. And more and  
6 more of us are seeing that economic growth has  
7 become a massive cancer that is eating away at the  
8 heart of our industrial civilization, and that  
9 makes me very sad.

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

19                   Disasters do happen. Of course,  
20 Japan is the latest one, but I think we need to ask  
21 ourselves what were the Japanese saying about the  
22 likelihood of this before it happened? I think we  
23 need to honestly ask, what were they saying? And  
24 why is it that we always assume, well, it always  
25 happens to other people; it's never going to happen

1 to us. It couldn't possibly happen here. I beg to  
2 differ.

3 I see the -- a moral question  
4 really involved, particularly when I see the  
5 decision making that has been -- had to be made by  
6 the Safety Commission over all these years, by the  
7 regulator, that the only actual case I know of  
8 where the boom was lowered on the industry, was the  
9 isotope crisis. And within a week or two, the  
10 Prime Minister had fired its chair. I wasn't  
11 surprised, but I was saddened by that fact.

12 The CNSC and Health Canada are  
13 both subservient to this minority government which  
14 is pro-nuclear. And in my humble opinion,  
15 dedicated not to the health and safety of the  
16 people, but to the health and safety of the  
17 industry. Both depend upon ignorance amongst the  
18 general public to maintain their influence.

19 So finally I see us in a situation  
20 that the -- our Native leaders brought to my mind  
21 again when they were speaking. They don't talk the  
22 way we talk. They don't think the way we think.  
23 I've just come back from a week in Hay River up at  
24 Great Slave Lake where Dené leaders, the Elders,  
25 were speaking to about 70 young people who were up



1 our short-term benefit for a so-called better life  
2 for us when our standard of living is already  
3 obscenely unsustainable.

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

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

20 I think if any of us could go up  
21 there, we would have an immediate conversion in the  
22 way we think about everything. And we wouldn't be  
23 caught on these long, interminably dragged out  
24 buttings of heads over what are specific issues  
25 associated with the real problem. My own belief is

1 that -- that when that astronaut said to pollute  
2 the earth is to spit in the face of God, I can't  
3 help feeling that what we have planned for  
4 Darlington is to spit in the face of God or as our  
5 Native people would say, in the face of the  
6 Creator. Thank you for your attention.

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

11 --- QUESTIONS BY THE PANEL:

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

23 MR. LAWSON: Can you hear me? Oh,  
24 yeah. Over and over again, we have seen these  
25 studies saying, well, Port Hope is too small a

1 community. We have to have a big enough one to  
2 make sense. So we have to go down to Trenton or up  
3 to Oshawa or so on, to make it work instead of  
4 looking closely at the people in our town who have  
5 lived for 60 years with exposure.

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

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

18 We found you couldn't do it in  
19 Canada because the government had closed the labs.  
20 They do that.

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

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

25 And it was done and back came very

1 disturbing results.

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

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

11                                And what was the reaction? They  
12 were lambasted as ruining the town's image.

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

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

19                                And I've lived through these over  
20 and over again.

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

25                                And it took us until the last

1 minute to realize, my God, we won.

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

5                                 Thank God we had a referendum.

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

10                                And it -- we were assured right up  
11 until the last minute you're wasting your breath.  
12 It's going to happen.

13                                So we have had some -- some -- we  
14 don't always lose, but we've had some pretty bitter  
15 experience.

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

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

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

25                                So it's -- it -- there's always

1 ways around it.

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

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

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

15 So you can understand where I'm  
16 coming from.

17 MEMBER BEAUDET: Thank you.

18 No more questions, Mr. Chairman.

19 CHAIRPERSON GRAHAM: Thank you,  
20 Madam Beaudet.

21 Mr. Pereira?

22 MEMBER PEREIRA: Thank you, Mr.  
23 Chairman.

24 Mr. Lawson, in your submission,  
25 you have -- the sentence says, With the advent of

1 climate disruption, nuclear facilities on our major  
2 waterways become more and more vulnerable.  
3 Darlington is a prime case of this.

4                                 What exactly do you mean by that?

5                                 MR. LAWSON: I mean that the  
6 notion that an earthquake here or over -- the other  
7 side of the lake could not happen and could not do  
8 what happened to the -- in Japan is daydreaming.

9                                 Of course it can happen. And  
10 anything that can happen eventually is going to  
11 happen, eventually, maybe next year, maybe 100  
12 years from now, but it's going to happen.

13                                And this is what all my study of  
14 history has taught me, that you -- you cannot  
15 pretend that Darlington is a safe place to do this  
16 on the -- on the greatest fresh water resource this  
17 part of the world has.

18                                It's -- to my way of thinking, it  
19 is sacrilegious to do this.

20                                MEMBER PEREIRA: Thank you for  
21 that comment.

22                                And in the environmental impact  
23 statement, Ontario Power Generation has looked at  
24 the risk of earthquakes and the risk of tsunamis  
25 and so on, so they've tried to address that.

1 I'd like to go onto another pretty  
2 strong statement you make in your submission, and  
3 you repeated it, and you say, The CNSC and Health  
4 Canada, both subservient to this minority  
5 government, have always been dedicated to  
6 protection, not of the people and the environment,  
7 but of the industry.

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

10 MR. LAWSON: Yeah.

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

14 MR. LAWSON: Yeah, that's --

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

17 MR. LAWSON: Quite  
18 confrontational, isn't it?

19 MEMBER PEREIRA: But you're not  
20 glossing over issues here.

21 MR. LAWSON: Yeah, I'm not  
22 practicing what I preach.

23 MEMBER PEREIRA: You're making a  
24 strong statement.

25 MR. LAWSON: Well, I am, by

1 nature, a -- what's the word? Unlike my wife, I'm  
2 -- I am, unfortunately, a little more -- tend to  
3 get people's backs up where she doesn't.

4 MEMBER PERIERA: Well, that's a  
5 very strong statement, which we in this panel, if  
6 we just left it at that, would not be -- be fair to  
7 the CNSC to give them a chance to respond to that  
8 strong statement saying that they're here to  
9 protect the industry and not the people and the  
10 environment.

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

13 DR. THOMPSON: Patsy Thompson for  
14 the record.

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

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

24 MEMBER PEREIRA: Can I ask you,  
25 CNSC, another question?

1                   There's one example in this  
2 presentation about a time when the CNSC took strong  
3 regulatory action to curtail activities in the  
4 nuclear industry.

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

10                   MR. HOWDEN: Hello. Barclay  
11 Howden speaking.

12                   Yeah. The CNSC has a compliance  
13 program, and part of the compliance program,  
14 there's an inspection part of it, but there's also  
15 an enforcement part of it.

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

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

24                   But three examples that we have  
25 from different industries are the CNSC did shut

1 down the construction of the tailings management  
2 facility at the MacLean Lake back in the late 1990s  
3 as the construction methods weren't up to par. So  
4 this set back the proponent for quite a period of  
5 time until they could take corrective action.

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

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

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

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

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

24                   Thank you.

25                   MEMBER PEREIRA: Thank you.

1 One further question to the CNSC.  
2 In Canada, you're the nuclear  
3 regulator.

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

7 MR. HOWDEN: Barclay Howden  
8 speaking.

9 Yes. As part of the --

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

12 MR. LAWSON: Oh, I'm sorry.

13 CHAIRPERSON GRAHAM: -- while he's  
14 speaking because it rings.

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

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

22 Additionally, in 2009, the CNSC  
23 underwent an integrated regulatory review service  
24 review. This is a service that was provided by --  
25 organized by the International Atomic Energy

1 Agency. The CNSC underwent and integrated  
2 regulatory review service review. This is a  
3 service that was provided by -- organized by the  
4 International Atomic Energy Agency where there was  
5 20 international regulators from 13 countries came  
6 in to assess the CNSC regulatory system. And there  
7 was -- from that, there was findings of 19 good  
8 practices, 14 suggestions -- or 14 recommendations  
9 and 18 suggestions.

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

17 We also tracked the -- the actions  
18 that we've taken to address those -- those  
19 particular issues. Thank you.

20 MEMBER PEREIRA: Thank you, Mr.  
21 Chairman.

22 CHAIRPERSON GRAHAM: Thank you. I  
23 have one question, and that's to CNSC, Mr. Howden.  
24 In the 1990s, several or a number of nuclear  
25 reactors were shut down at at least two OPG sites,

1 Bruce and at Pickering. Did AECL -- not AECL,  
2 AECEB, I should say, did they play a role in that at  
3 the time, or was that a voluntary move by OPG at  
4 the time, which was not called -- it was -- there  
5 was another name for the power commission at that  
6 time, but what role did you -- the reason I'm  
7 asking the question is, what role do you play in --  
8 if a reactor is not operating to the -- to the --  
9 to your requirements do you have in shutting them  
10 down?

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

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

25 That was all done under AECEB and

1 then CNSC regulatory oversight.

2 CHAIRPERSON GRAHAM: So that  
3 safeguard -- that safeguard is still there. Is  
4 that what you're saying?

5 MR. HOWDEN: Barclay Howden. That  
6 is correct.

7 MR. LAWSON: Could I make a  
8 statement?

9 CHAIRPERSON GRAHAM: Yes.

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

17 CHAIRPERSON GRAHAM: Mr. Howden.

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

1                   CHAIRPERSON GRAHAM: Thank you.  
2 The procedure we have now, if there's no other  
3 questions from my colleagues, we'll go to OPG. Do  
4 you have any questions to Mr. Lawson?

5                   MR. SWEETNAM: Albert Sweetnam.  
6 No questions.

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

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

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

19                  MR. LAWSON: Thank you, sir.

20                  CHAIRPERSON GRAHAM: With that, we  
21 are going to -- the floor will now go into some  
22 written submissions that we received, and I will  
23 ask my Co-manager, Ms. McGee, to present these in a  
24 manner that panel members and only panel members  
25 will have questions on them. Thank you very much.

1 Ms. McGee.

2 --- WRITTEN SUBMISSIONS AND COMMENTS BY THE PANEL:

3 MS. MCGEE: Thank you, Mr. Chair.  
4 The Joint Review Panel, as the Chair noted, will  
5 now move to the consideration of some of the  
6 written submissions received. I will identify the  
7 writer and the PMD number for each submission, and  
8 the panel members will then have an opportunity to  
9 ask questions.

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

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

25 - CHAIRPERSON GRAHAM: Thank you,

1 Kelly. Questions from the floor. As the co-  
2 manager mentioned, the theme is all very similar,  
3 and that's why they were read as a group, because  
4 of the theme and because of their comments, but on  
5 any or one of these comments, panel members, any  
6 questions, and I'll go to Mr. Pereira first.

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

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

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

24                                 MEMBER BEAUDET: I agree with my  
25 colleague's comments here. They also raise support



1 thank you. We'll go on to some other written  
2 submission that carry -- that carry some various  
3 themes, and, Kelly, you'll start off with I think  
4 it's number 58.

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

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

13 Madam Beaudet?

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

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

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

25 CHAIRPERSON GRAHAM: Mr. Pereira?

1                   MEMBER PEREIRA: Thank you, Mr.  
2 Chairman.

3                   I too have very little on these  
4 three PMDs.

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

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

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

17                   Thank you.

18                   CHAIRPERSON GRAHAM: Thank you,  
19 Mr. Pereira.

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

1 made.

2 So I also just wanted to note  
3 that.

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

7 MS. MCGEE: Thank you, Mr. Chair.

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

13 Thank you.

14 CHAIRPERSON GRAHAM: Questions  
15 from panel members.

16 Mr. Pereira?

17 MEMBER PEREIRA: Thank you, Mr.  
18 Chairman.

19 Pour PMD1.131 de Marcel Gitte, je  
20 n'ai pas de commentaires.

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

1 sustainable development.

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

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

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

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

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

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

22                   So, in my view, this intervenor  
23 has raised a number of important issues, all of  
24 which are already -- have already been raised  
25 and/or discussed in our -- in our hearings so far,

1 and we -- which we will be considering further.

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

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

10 I have no further comments.

11 CHAIRPERSON GRAHAM: Madam Beaudet?

12 MEMBER BEAUDET: I agree with Mr.  
13 Pereira's comment.

14 There's one point that I'd like to  
15 bring with Mr. Gitte.

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

21 Mais je crois qu'avec les  
22 informations de notre personnel, nous avons été mis  
23 au courant exactement de la situation qui concerne  
24 Mr. Gitte puisqu'il est déjà apparu devant d'autres  
25 commissions, la Commission de sûreté nucléaire du

1 Canada.

2                                   Concernant -- following the other  
3 presentation -- in relation to the other  
4 presentation, the submission especially of Mr.  
5 Penna, which is PMD1.150, he expresses a view that  
6 has been brought already in front of us about the  
7 full cycle or the cumulative impact of the entire  
8 nuclear chain.

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

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

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

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

25                                   With that, it's -- I will now

1 declare that the afternoon agenda is complete and  
2 that tonight we'll resume at 7:00 in the -- at the  
3 same place.

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

6                                   So with that, I -- it's Port  
7 Hope Community Health Concerns Committee. So  
8 that's what we'll start with.

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

11                                   Thank you very much, everyone, for  
12 participating today.

13 --- Upon adjourning at 4:23 p.m.

14 --- Upon resuming at 7:01 p.m.

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

20                                   Panel Secretariat staff are  
21 available at the back of the room. Please speak to  
22 Julie Bouchard if you are scheduled to make a  
23 presentation at this session. If you want the  
24 permission of the Chair to put a question to a  
25 presenter or if you were not previously registered,

1 but wish to speak now. Opportunities for questions  
2 or to make a brief oral statement are subject to  
3 the availability of time.

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

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

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

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

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

1 plant -- in Pickering, the nuclear plants there.

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

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

22                   The studies that were promised at  
23 the time in 1979 dollars were \$5 million, and this  
24 was to follow up on people who lived in  
25 contaminated properties who were specifically

1 exposed to radioactive material and to do  
2 longitudinal studies. Most of those have never  
3 been done.

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

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

1 risk assessments can be catastrophic. Risks are  
2 based on predictions and assumptions and in this  
3 industry it seems as if theory trumps reality.

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

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

15 *"Although there were some*  
16 *increases in some cancers,*  
17 *when findings were broken*  
18 *down by age group, sex and*  
19 *time period and residence*  
20 *coding such as cancers of the*  
21 *colon and rectum, brain and*  
22 *other nervous system cancer,*  
23 *esophagus, lip, pharynx,*  
24 *nose, sinuses, it was*  
25 *unlikely these cancers were*

1                   *related to the nuclear*  
2                   *industry within the town*  
3                   *because of their lack of*  
4                   *biological plausibility and*  
5                   *the lack of experimental*  
6                   *evidence linking them to Port*  
7                   *Hope contaminants. They were*  
8                   *more likely due to the*  
9                   *natural variation in the*  
10                  *occurrence of disease. The*  
11                  *small number of observed and*  
12                  *expected cases in deaths for*  
13                  *most of these cancers and the*  
14                  *wide confidence intervals*  
15                  *makes any interpretation of*  
16                  *findings uncertain."*

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

21                               *"No conclusive evidence was*  
22                               *found to link residential*  
23                               *radon to lung cancer rates*  
24                               *even among people living in*  
25                               *homes with high levels of*



1 precautionary principles not applied, but neither  
2 is common sense or common decency.

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

6 *"Ionizing radiation is*  
7 *invisible, high frequency*  
8 *radiation that can damage the*  
9 *DNA or genes inside the body.*  
10 *The U.S. EPA says there is no*  
11 *level below which we can say*  
12 *an exposure poses no risk;*  
13 *radiation is a carcinogen.*  
14 *It may also cause other*  
15 *adverse health effects*  
16 *including genetic defects in*  
17 *children of exposed parents*  
18 *or mental retardation in the*  
19 *children of mothers exposed*  
20 *during pregnancy."*

21 What we submitted was an excerpt;  
22 what we would like to focus on for a few minutes is  
23 what the United States has done.

24 The United States has made an  
25 effort to accept responsibility for the exposure of



1 bone, lung, colon, and ovary,  
2 bronchoalveolar, carcinoma,  
3 multiple myeloma,  
4 lymphomas other than  
5 Hodgkin's Disease, and  
6 primary liver cancer, and  
7 they're exceptions."

8 The Veterans' Administration  
9 Regulations define all cancers as possibly caused  
10 by radiation. Other non-malignant conditions might  
11 be caused by radiation, and they include -- and  
12 they give a list of those. For a given individual  
13 the Veterans' Administration will also consider the  
14 possibility that other diseases were caused by  
15 radiation if supported by medical or scientific  
16 evidence.

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

25 There we go. Just a couple of

1 statements that Congress made.

2 "Since World War II federal  
3 nuclear activities have been  
4 explicitly recognized under  
5 federal law as activities  
6 that are ultra hazardous.  
7 Nuclear weapons production  
8 and testing have involved  
9 unique dangers. Many  
10 previously secret records  
11 have documented unmonitored  
12 exposures to radiation and  
13 beryllium, and there are  
14 continuing problems at sites  
15 across the nation. The  
16 policy of the Department of  
17 Energy had been to litigate  
18 occupational illness claims,  
19 which deterred workers from  
20 filing compensation claims,  
21 and has been a major burden.

22 Over the past 20 years, more  
23 than two dozen scientific findings have emerged  
24 that indicate that certain of such employees are  
25 experiencing increased risks of dying from cancer

1 and non-malignant diseases. And what they  
2 found was that this was occurring at levels below  
3 -- they're occurring at dose levels below the  
4 existing maximum safe thresholds, so they changed.

5                   What Canada needs are the kind of  
6 public hearings that were held in the United  
7 States, they need to be held independently of the  
8 federal government departments that have the  
9 control over the current situation to hear from the  
10 public, to hear from the workers, hear from  
11 communities, hear from doctors. Come into the 21<sup>st</sup>  
12 century on the dangers of radiation.

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

20                                   "Children have a number of  
21                                   vulnerabilities that place  
22                                   them at greater risk of harm  
23                                   after radiation exposure,  
24                                   because they have a  
25                                   relatively greater minute

1                   ventilation compared with  
2                   adults children are likely  
3                   to have greater exposure to  
4                   radioactive gasses."

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

9                   Also a point we contradicted from  
10 Health Canada is when they argued that in Port Hope  
11 90 percent of our exposure is due to ingestion. We  
12 argue, 90 percent or more of our exposure is due to  
13 air inhalation.

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

20                   "For a given uranium intake  
21                   the inhalation pathway gives  
22                   doses 200 times greater than  
23                   ingestion."

24                   That's why it's critically  
25 important when doing risk assessments, when setting



1 236. One worker excreted depleted uranium, and  
2 that was many years after being in the plant. A  
3 child was included in the testing and also had the  
4 elevated 234. The control subjects did not show  
5 the contaminants and the ratios of isotopes that  
6 were present in the Port Hope subjects.

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

13                                   "With regard to the issue of  
14                                   the presence of uranium 236  
15                                   that was made by the  
16                                   intervenor, would you like to  
17                                   comment?"

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

20                                   "Yes. The issue of U-236  
21                                   that comes from the  
22                                   reprocessed uranium that is  
23                                   fed back into the enrichment  
24                                   plants, I think if you go  
25                                   back to probably the '60s,

1 the fuel was reprocessed and  
2 still is reprocessed in some  
3 places like France. And that  
4 gives you back some uranium.  
5 The uranium needs to be  
6 enriched again to be used in  
7 reactor fuels so it is a  
8 small part of feed that goes  
9 into the enrichment plant.  
10 Because of that there is a  
11 trace of U-236 that comes  
12 back through the reprocessed  
13 uranium. That appears in  
14 both the depleted line and  
15 the enriched line because  
16 obviously U-236 is  
17 intermediate in mass between  
18 the 235 and the 238, so it  
19 sort of splits both ways.  
20 The levels are extremely low,  
21 so the health studies showed  
22 we are dealing with maybe a  
23 millionth of the uranium  
24 being of this U-236, and its  
25 radioactivity is, while

1 higher than natural uranium,  
2 is not that much higher than  
3 the overall effect of the  
4 uranium that results with the  
5 trace of U-236 from a dose  
6 point of view, so it's not  
7 significantly different than  
8 if U-236 was not there."

9 What we see, what we hear is an  
10 attempt to normalize spent reactor material in the  
11 bodies of workers.

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

17 Examples that we would like to  
18 hold up at the moment around the elevated disease  
19 trends, this is point number 4, that were not  
20 recognized by the CNSC, I have read you what the  
21 reaction was in the CNSC synthesis report, so that  
22 just sort of cuts to the bottom line of what they  
23 did with the elevated rates of disease in Port  
24 Hope, which was dismiss them. They rolled them all  
25 together and they averaged them, and they found

1 some way to say that they were not significant.

2                                    You'll notice that the US  
3 Department of Justice does not do that. It doesn't  
4 expect its people to have all of the cancers, and  
5 it doesn't say you have to have a couple for it to  
6 be significant. There are 36 diseases.

7                                    Health Canada selected leukemia,  
8 lung cancer, breast cancer, and thyroid cancer,  
9 when it analyzed these studies. And even though it  
10 acknowledged that there were significantly elevated  
11 rates of disease, and that's statistically  
12 significant, rates of disease, they managed to say  
13 they just didn't find that plausibly relatable to  
14 exposure to radiation in Port Hope. But Dr. Mince,  
15 who was an independent epidemiologist, who was at  
16 our request accepted by the CNSC as an independent  
17 peer reviewer said there was a 13 percent elevation  
18 in Port Hope of overall deaths, 48 percent more  
19 cancer childhood deaths than expected, 41 percent  
20 more childhood leukemia.

21                                   Lung cancer was elevated for men  
22 and women in different time periods, female rates  
23 significantly elevated 1986 to '96. Adult brain  
24 cancer was elevated for men and women; women more  
25 than twice the expected rate 1986 to '97 and

1 significantly elevated in the entire study period.

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

8                   Nasal sinus cancer significantly  
9 elevated for men; over five times the expected rate  
10 1971 to 1985. Esophogial cancer, twice the  
11 expected rate for men '71 to '85. Women have a 50  
12 percent excess the entire study period.

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

20                   Female death rate rose  
21 dramatically from 1986 to '96 with 100 more deaths  
22 than expected. This is in a small community.

23                   So our argument to you is that  
24 these statistics matter. We need the federal  
25 government, we need the regulator to look at the

1 United States experience. Either we have a serious  
2 competency gap here or a serious knowledge gap,  
3 and we need it fixed because peoples' lives matter.

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

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

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

23                                   But these trucks drive up through  
24 town, they go -- sorry -- they travel through our  
25 community, they stop at red lights, they go on the

1 the 401, they travel to Oshawa, they travel to  
2 Montreal. And from Oshawa, we know -- we have  
3 access to information based on 2005, 156 cylinders  
4 of radioactive uranium hexafluoride, and they are  
5 approved for depleted uranium, natural and  
6 enriched, from Cameco which -- to be transported to  
7 Oshawa, loaded at Oshawa Harbour onto a vessel and  
8 transported to Rotterdam through Lake Ontario and  
9 the St. Lawrence Seaway.

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

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

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

25                   That's certainly our information

1 from reading these -- reading these documents. And  
2 I would add that neutron radiation was discovered  
3 in Port Hope by the Port Hope Community Health  
4 Concerns Committee working with the Uranium Medical  
5 Research Centre with special testing equipment  
6 around 2005 walking up to trucks in the Cameco  
7 parking lot.

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

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

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

25                   The others, you have to go through

1 a dose reconstruction. How do workers do that?  
2 They have both hands tied behind their back doing  
3 dose reconstruction when workers have been exposed,  
4 like those at Cameco, to neutron radiation with no  
5 monitoring, and the response of the employer being  
6 -- and the regulator, by the way, being, it's just  
7 a little bit. This is cumulative. It is  
8 cumulative to all of us.

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

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

23                   We would ask you to give great  
24 pause to anyone tell you -- telling you that  
25 seismic activity in this area at the rate of

1 roughly one a year, clearly detectible, one in 1998  
2 at 5.4, 95 kilometres northeast of Cleveland, is  
3 not significant.

4 We watched Japan with sadness,  
5 with anxiety. Please, let's learn something.  
6 Thank you.

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

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

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

23 Labs such as this were closed down  
24 at that time in the United States and Great  
25 Britain, the reason being that the Gulf War

1 veterans had come place, and the only place the  
2 Americans, this UMRC group could get their samples  
3 analyzed was St. John's, Newfoundland lab.

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

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

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

21                   We live it. We know -- we know  
22 the people that are dead and dying and they've been  
23 our friends all our lives. And that's why we're  
24 trying to do something because another nuclear  
25 generating station is a real threat to the health

1 of the people, so we oppose the Darlington Nuclear  
2 Generating Station.

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

7 --- QUESTIONS BY THE PANEL:

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

12 Aside with one issue that does  
13 apply to the proposed operation of the new station  
14 of Darlington, that's to do with transport because  
15 in the operation of the station, the proposed  
16 station, there will be the transport of -- proposed  
17 transport of low level and intermediate level waste  
18 from the station to perhaps a storage facility near  
19 Bruce.

20 And we have heard responses  
21 previously from the CNSC on the standards used for  
22 transportation. The CNSC staff, have any comments  
23 on the observations presented by the intervenors on  
24 radiation doses emanating from transport containers  
25 leaving the Port Hope facility?

1                                   MR. HOWDEN:  Barclay Howden  
2  speaking.  In terms of the transportation of  
3  those -- the use of those containers, they're  
4  governed under the Transportation of Dangerous  
5  Goods and the Packaging and Transport of Nuclear  
6  Substance Regulations.

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

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

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

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

20                                  MR. HOWDEN:  Yes, normally it's  
21 done one meter from the package.

22                                  MEMBER PEREIRA:  So what you will  
23 provide us would be the dose rates for the packages  
24 that the intervenors have spoken about.  And what  
25 would be the dose rate for the sort of reactor,

1 waste containers that would be proposed for the new  
2 generating station?

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

10 MEMBER PEREIRA: Can we take it as  
11 an undertaking?

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

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

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

23 MEMBER PEREIRA: Thank you. The  
24 second issue that I would like to touch on because  
25 is it relevant to the Darlington Reactor Project is

1 the question of earthquakes in the vicinity of  
2 Darlington.

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

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

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

23 CHAIRPERSON GRAHAM: Ms. Moore?

24 MS. MOORE: Thank you. May I  
25 clarify, when they appeared before, did they

1 provide this information to you? Were you aware  
2 that there is roughly one -- there was a period of  
3 about one a year?

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

8 MS. MOORE: Yeah.

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

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

19 MS. MOORE: Yeah.

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

25 And I think -- I'm not sure when

1 that information is coming, but I believe they are  
2 coming back. And we'll check to make sure and it  
3 will be posted on the website -- on our site.

4 Mr. Pereira?

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

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

21 We go on then to -- I'll turn to  
22 CNSC staff and to seek your comments on the  
23 concerns being expressed about the position taken  
24 on the assessment of studies, various studies done  
25 in the Port Hope area by Health Canada, by CNSC or

1 for the CNSC and by other organizations. I heard  
2 reference to Queen's University.

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

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

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

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

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

25 And there's been cohort studies of

1 the workers in Cameco Port Hope facility.

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

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

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

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

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

22 UNKNOWN SPEAKER: Sorry, it's a  
23 bit hard to hear.

24 DR. THOMPSON: Sorry.

25 And the work that CNSC staff did

1 to pull together that work and use a weight-of-  
2 evidence approach was reviewed by other experts in  
3 the field, so they -- our work was peer reviewed.

4 And we also -- to validate the  
5 work that was being done in Port Hope over time was  
6 compared with work that had been done  
7 internationally for similar populations or similar  
8 sites. And the work was compared with about 40  
9 studies done internationally.

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

13 MEMBER PEREIRA: Thank you.

14 I'd like to go on to get some  
15 clarification on a number of issues.

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

20 And in this hearing, we've been  
21 talking about Becquerels and doses and sieverts.

22 Could CNSC staff give us some  
23 equivalences there, or is that not relevant?

24 DR. THOMPSON: Patsy Thompson for  
25 the record.

1                   For -- in most cases, a gray can  
2 be equated to a sievert, so a sievert or 1,000  
3 milli-sieverts.

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

9                   And similarly 3 to 6 grays is 3 to  
10 6 sieverts, so 3,000 to 6,000 milli-sieverts.

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

15                   MEMBER PEREIRA: Thank you.

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

20                   So these health effects then help  
21 put into perspective for us what those evacuation  
22 and sheltering criteria mean. So that's useful for  
23 us.

24                   Also, there is a considerable  
25 amount of information presented in the -- in the

1 intervenor's submission on practices in the United  
2 States for compensation of workers exposed to  
3 weapons testing or occupational hazards.

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

7                               We haven't done any weapons  
8 testing in Canada?

9                               DR. THOMPSON: Patsy Thompson for  
10 the record.

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

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

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

22                              My understanding is if there was a  
23 situation where a worker was exposed to very high  
24 levels of radiation where health effects are  
25 expected that we -- it was explained earlier this

1 week by Mr. Sweetnam that the worker insurance  
2 compensation board, probably in Ontario, would be  
3 the organization in terms of compensation.

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

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

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

16 MEMBER PEREIRA: Thank you.

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

21 Thank you.

22 CHAIRPERSON GRAHAM: Thank you,  
23 Mr. Pereira.

24 Ms. Moore, you put your hand up  
25 once.

1                                   Do you want to -- do you want to  
2 respond something to Mr. Pereira's questions?

3                                   MS. MOORE: Thank you.

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

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

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

22                                  We do not understand lack of  
23 biological plausibility and the lack of  
24 experimental evidence linking them to Port Hope  
25 contaminants.

1                   If there's a lack of evidence,  
2 it's because the proper studies haven't been done,  
3 first of all.

4                   But there's certainly biological  
5 plausibility.

6                   No one can try and tell us that  
7 they know what our dose is in Port Hope.  
8 Everyone's dose is unique. And we get it through  
9 inhalation, and it depends where we are. We're  
10 talking about internal contamination, and we're  
11 talking about doses to cells around alpha  
12 particles, right?

13                   So I'm not understanding this at  
14 all. There's a lot of prejudging going on.

15                   And going back to the whole risk  
16 assessment issue that we raised at the beginning,  
17 this is a huge assumption.

18                   And this is our health.

19                   And this was one of the few  
20 studies that we actually got done. And at the  
21 front of the actual study, it stated it's because  
22 of the pressure of the community, our committee in  
23 particular, to do this work.

24                   And so when we get this back, it's  
25 very distressing.

1 MEMBER PEREIRA: Thank you.

2 MS. MOORE: Thank you.

3 MEMBER PEREIRA: I'll ask the CNSC  
4 staff to provide the clarification requested.

5 DR. THOMPSON: Patsy Thompson for  
6 the record.

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

17 And what we find, for example, for  
18 lip cancer or throat and these are cancers that are  
19 normally associated with smoking, similar to  
20 cardiovascular disease, is often associated with  
21 health styles that are -- lifestyles that are not  
22 necessarily the healthiest ones. And we know from  
23 many studies of -- very good cohort studies that  
24 have been done that, for example, cardiovascular  
25 disease, do not occur at doses less than -- at less

1 than 1,000 to 2,000 millisieverts. So that's what  
2 we mean by biological plausibility. There has to  
3 be an association between the contaminants found in  
4 Port Hope and the diseases we were looking at.

5 MEMBER PEREIRA: Thank you.

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

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

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

23 DR. THOMPSON: Patsy Thompson for  
24 the record. I would offer that the -- the first  
25 standard is to have a facility that is regulated

1 tightly and has operated safely and that the doses  
2 around all Canadian nuclear facilities are well,  
3 well below the public dose limit and are not  
4 associated with doses that would cause health  
5 effects.

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

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

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

22                               DR. THOMPSON: Patsy Thompson for  
23 the record. If I could suggest we will contact  
24 Health Canada tomorrow and see what is feasible by  
25 what time.

1 CHAIRPERSON GRAHAM: That would be  
2 fine. Madam Beaudet, is that satisfactory?

3 MEMBER BEAUDET: Yes, thank you.  
4 I'd like to go to OPG now. You have I think an  
5 annual report on your website that indicates all  
6 the data that is collected for different locations  
7 around a site to monitor if there is any emission  
8 -- excuse me. Now, those reports are made public  
9 and they are submitted officially to whom? CNSC?  
10 Health Canada?

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

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

18 CHAIRPERSON GRAHAM: Thank you. I  
19 have a question for OPG. There's been discussion  
20 about the technologies and the CANDU -- what type  
21 of fuels it uses, but if there was a boiling water  
22 reactor technology that was needed to be used, you  
23 would use a LEU fuel I believe. And what I'm  
24 wondering is that fuel is, to my knowledge, is not  
25 produced in Canada now so that would have to be

1 brought in from another location; is that correct?

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

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

14 MR. HOWDEN: Barclay Howden  
15 speaking. If the fuel was manufactured outside of  
16 Canada, the regulatory requirements would be on the  
17 -- the transport of the fuel to the facility. At  
18 the facility, the facility's licence would have to  
19 allow it to be able to possess LEU fuel. If there  
20 was a proposal to manufacture the LEU fuel in  
21 Canada, the facility that would be doing that would  
22 have to undergo the regular regulatory process in  
23 the form of an environmental assessment if the  
24 facility wasn't qualified to do that at this point,  
25 followed by licencing. And they would have to go

1 through the regular licencing process and because  
2 it was LEU fuel, they would have to institute  
3 criticality controls within the facility according  
4 to Canadian requirements.

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

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

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

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

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

1 Pereira. Have you reviewed that and do you have  
2 comments on that study that was -- I'm referring to  
3 the \$11,000 study and I can give you the official  
4 name, but I'm sure you know it? What I'm talking  
5 about is the 2007 Uranium Medical Research Centre  
6 study.

7 DR. THOMPSON: Patsy Thompson for  
8 the record. The CNSC staff as well as Health  
9 Canada reviewed the results of the concentrations  
10 of uranium in urine in the samples that were  
11 provided by citizens of Port Hope and we have  
12 compared these levels of uranium in urine to levels  
13 naturally occurring, not just in Canada, but  
14 elsewhere in the world. And what we found is that  
15 the levels of uranium in urine in the citizens of  
16 Port Hope, their samples that were provided, were  
17 in the range of those that we find naturally  
18 occurring. In terms of the ratio of the different  
19 uranium isotopes the information we have received  
20 from Health Canada in terms of the ability of those  
21 analytical methods to detect isotopes and very low  
22 levels of uranium in urine was that the isotopes  
23 were almost at the limit of detection, and so the  
24 ratios were -- I would say there was uncertainty in  
25 the ratios measured because of the very low levels

1 of uranium and the close to limit of detections in  
2 the samples.

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

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

19                                   Uranium is naturally occurring,  
20 and so all of us have uranium in our urine.  
21 There's been a number of measurements done in many  
22 places in the world that provide a range of uranium  
23 in urine from naturally occurring uranium. And  
24 what was found was that the levels in the samples  
25 provided in that study were within the range of

1 natural background levels of uranium in urine.

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

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

20                   Every question that's developed is  
21 either from what we hear at the hearings, but we  
22 develop our questions on our own over a period of  
23 probably two weeks before we go to a Commission.  
24 So I've taken pride, and knowing my colleagues at  
25 the Commission, the appointed ones who are part-

1 time Commissioners, we have always taken pride in  
2 being independent.

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

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

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

18                                 They don't really make a note that  
19 there's a problem in identifying the isotopes  
20 because of the low amount. They acknowledge that  
21 there's an anomalous ratio and the elevated U-236  
22 concentration suggests that these individuals were  
23 exposed to another source of uranium that is not  
24 present in nature because the U-236 isotope is a  
25 result of a nuclear reaction.

1                                   But the argument ends up being  
2 from them that it doesn't really matter what kind  
3 of uranium it is, which we find pretty astounding.  
4 When you look at the US experience and the US  
5 science and there are lots of problems at US  
6 facilities, but they have been dealing with isotope  
7 ratios. It is the fundamental basis of the nuclear  
8 industry is isotopic ratios.

9                                   They have been working on this for  
10 40 years, so the kind of uranium matters. It has  
11 different health effects depending on particle  
12 size, the way it is delivered, and if is internal  
13 and if it is insoluble and remains in the body for  
14 many years.

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

23                                  You saw that our elevated rates of  
24 disease in Port Hope were dismissed with two  
25 sentences. It's not plausible. It's absolutely

1 plausible, absolutely plausible, and it will be in  
2 public hearings. That's where we need the time, we  
3 need the expertise of people to come who are  
4 external and are able -- and that's what I'm  
5 referring to around having independent public  
6 hearings, which is really what they did in the  
7 United States and gave rise to the legislation for  
8 the workers, for the military, and for the  
9 community down winders.

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

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

25                   More than 60 percent of them are

1 fugitive emissions; they're not controlled. So  
2 we're exposed to that, and we have waste all around  
3 the town that needs to be cleaned up. That no one  
4 can tell us -- and we have trucks driving by, so we  
5 have internal from inhaling particles, we have  
6 external from the trucks and the UF-6 cylinders.  
7 No one can tell us what our individual dose is, and  
8 they cannot begin to tell us what is plausible.  
9 Thank you.

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

13 MR. SWEETNAM: Albert Sweetnam.  
14 No questions.

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

17 DR. THOMPSON: Patsy Thompson. No  
18 questions.

19 CHAIRPERSON GRAHAM: Government  
20 departments, federal or provincial, do you have any  
21 questions for the intervenor? If not, then I  
22 understand I have one intervenor from the floor,  
23 and that's Mr. Haskill over there. Mr. Haskill, if  
24 you'd take the microphone there, please?

25 --- QUESTIONS BY THE INTERVENORS:

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

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

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

19                  CHAIRPERSON GRAHAM: That study  
20 was presented the other day and those maps and so  
21 on. I'm not sure -- do we -- I'm not sure whether  
22 we print hard copies, but let me -- let us see if  
23 we can get it for you. We realize not everyone has  
24 computers and printers and so on, and to  
25 accommodate everyone and in fairness, we'll try and

1 find a way, I'm not promising tonight you're going  
2 to get one, but we'll do our best.

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

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

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

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

24 MR. HASKILL: Yes, I am indeed.

25 CHAIRPERSON GRAHAM: Okay.

1 MR. HASKILL: And I understand  
2 it's going there as we speak right now.

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

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

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

24 MR. SWEETNAM: Albert Sweetnam,  
25 for the record. That's correct. It has a distinct

1 symbol on it indicating hazardous waste.

2 CHAIRPERSON GRAHAM: Thank you.

3 MR. HASKILL: Mr. Chairman, I've  
4 got a supplement to that --

5 CHAIRPERSON GRAHAM: All right.  
6 Now, that'll be the last one, okay.

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

16 CHAIRPERSON GRAHAM: Thank you.  
17 I'm not sure what -- what authority we have, but  
18 we'll take your suggestion under consideration to  
19 see if we do have authority and how that may be  
20 relayed if we don't have the authority. At least  
21 the information will be relayed to the Ontario  
22 Ministry of Highways or whether it's that or  
23 security and so on.

24 MR. HASKILL: Thank you very much.

25 CHAIRPERSON GRAHAM: Thank you

1 very much. Ms. Moore, Ms. Lawson, thank you very  
2 much for coming tonight, it's always a pleasure and  
3 safe travels back to Port Hope. Thank you very  
4 much.

5 MS. MOORE: Thank you.

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

9 CHAIRPERSON GRAHAM: You always  
10 get the last word.

11 (Laughter)

12 MS. MOORE: Important  
13 clarification.

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

19 --- PRESENTATION BY MR. RUDKA:

20 MR. RUDKA: Thank you, ladies and  
21 gentlemen for letting me speak to you this evening.  
22 My name is Dan Rudka, I'm a former nuclear energy  
23 worker. I am one of the UMRC tested people for  
24 radiation inhalation. I am also a former resident  
25 of Port Hope. I now live in Clarington, and I'm

1 not really that brave because I -- I let the  
2 municipal authority and powers to be put enough  
3 pressure on me that I had to pack up my family and  
4 leave, so I'm not a brave person. Thank you, Ms.  
5 Moore, for saying so.

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

14                                   In 11 years, since the transfer of  
15 \$30 billion Ontarians, they have paid \$36.3  
16 billion. And we still owe \$27.6 billion. That's  
17 110 percent of this loan has been paid, we're still  
18 left owing 90 percent of the principal, and there's  
19 absolutely no reason to believe that the new  
20 Darlington is going to come in on schedule and on  
21 time.

22                                   The Ontario government gave us a  
23 book that's sent out to all the -- all the homes,  
24 and it said, "Electricity prices are changing, find  
25 out why." The booklet states over the five -- next

1 five years there'll be an increase of 7.9 percent.  
2 Then over the next 20 years it's projected  
3 increases of 3.5 percent per year, and the booklet  
4 now says, "How can I manage costs?" Well, the  
5 obvious answer here is that we can't manage costs.  
6 This is going to start to put undue hardship on  
7 many people within the province, especially the  
8 elderly and disabled. The OPG, I think it needs to  
9 pursue other ideas and options where growth managed  
10 and increased marginally as demand requires.

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

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

1 acid, sulphite oxide, and it goes on.

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

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

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

22                                 The Welcome site, effluent  
23 drainage pipe originally went a few feet out into  
24 the lake. It would eventually got broken up and  
25 just ended up stranded on the shoreline. A new

1 pipe has been put out a few hundred feet out into  
2 the lake where it would once again come to the  
3 surface. Now, it's concerning that the technology  
4 that runs our nuclear stations could not engineer a  
5 method to keep the pipe under the water.

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

16                   One year later I returned during  
17 the same migration for Monarchs. The pipe was now  
18 out further in the lake, over the same area of  
19 beach, one dead salmon. And that can be expected.  
20 Not a single butterfly. But now I can't help but  
21 wonder what's going on at the end of the lake where  
22 that -- where that pipe is stretched out into. I  
23 mean, it really shouldn't be flowing. These pipes  
24 should not be flowing any radioactive effluent of  
25 any kind or any toxic materials into our lakes.

1                   Now, next place along the lake we  
2 have Port Hope, industrial leader in nuclear fuel  
3 production for 70 years, and the proof to that  
4 legacy lies in Port Hope area initiative, and the  
5 project is budgeted to take 260 million taxpayer  
6 dollars to clean and store radioactive deposits  
7 throughout the town. Will this succeed on time and  
8 on budget? I doubt it very much.

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

24                   Anyway, as this cleanup goes on  
25 through Port Hope and it moves ahead to -- to clean

1 the soils and Cameco's fuel conversion facility  
2 right down the road, on the waterfront, will  
3 continue to release out of the exhaust stacks a  
4 minimum of 125 kilograms of fine uranium  
5 particulate and they're going to dust it back over  
6 the town and into the lake.

7                   The ground that Cameco stands on,  
8 it's contaminated, it's riddled with test wells,  
9 and the contaminants leach into the ground and  
10 eventually into the lake.

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

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

25                   The CNSC, Health Canada, the local

1 politicians say we don't need new studies. They  
2 say the old ones are fine. But the resistance and  
3 the reasoning behind this I find very questionable,  
4 and it should be very concerning to all.

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

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

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

14                   You know, if it's clean -- why do  
15 we need the cleanup if it's not dangerous to  
16 people?

17                   And it's quite obvious that there  
18 is a danger here.

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

22                   You don't have to listen to Health  
23 Canada's studies or the CNSC's studies. You just  
24 have to live there.

25                   If you go into the one walk-in

1 clinic, it's constantly backed up with people right  
2 out the hall.

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

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

14 There's something wrong there,  
15 there really is.

16 If I go to one pharmacy, the only  
17 pharmacy -- the busiest one, still the cycle, every  
18 41 days, the full population has had prescription  
19 medicine.

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

23 However, that's quite a number.

24 And to top that then, in the local  
25 news, January 21<sup>st</sup>, Northumberland Today, Port

1 Hope's daily paper, on page 2, the headline read:  
2 Local Lung Cancer Rates Exceed the Provincial  
3 Average.

4                               The Committee for Examining  
5 Radiation Risks of Internal Emitters established in  
6 2001, I'm sure most of you are familiar with it.

7                               They listed the following  
8 concerns:

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

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

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

25                              It continues. This is massively

1 significant. Official radiation risk agencies  
2 universally quantify risk in terms of dose.

3                   If it -- dose means nothing, and  
4 the agencies know nothing -- can give no valid  
5 advice.

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

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

15                   Now, as you know, I'm a former  
16 employee of the nuclear industry in Port Hope.

17                   The standards for exposure were  
18 laughable if the truth had not been so frightening.

19                   As a civilian, I'm allowed 1  
20 milli-sievert, but as soon as I sign the  
21 application and take the job, all of a sudden I can  
22 take 50 milli-sieverts per year.

23                   Well, I'm here to tell you that  
24 that -- I personally could not take that.

25                   Now, some years ago, in 2005, the

1 United States Academy of Sciences made a statement  
2 about Canada's permissible dose levels.

3 They stated, Exposure to low doses  
4 far below the permissible doses assigned by  
5 Canada's regulatory agency can cause fatal cancers.

6 They went on to say, The perfect  
7 crime.

8 We know people have been killed by  
9 radiation. We know who did it. We know the lethal  
10 weapon, but we cannot prove that any particular  
11 individual was actually killed this way.

12 Now, the situation is a result of  
13 high acceptable dose levels for radiation exposure  
14 in Canada.

15 The accepted levels are so high  
16 that rarely is that dose suspect enough to cause or  
17 be responsible for sickness, cancer, or death.

18 The latency period with exposure  
19 is often ignored and works for the industry and not  
20 for the worker.

21 Now, the Canadian nuclear industry  
22 and the CNSC and our political leaders hide beyond  
23 this truth. Because of this, people are suffering.

24 Now, not long ago at the Bruce  
25 power station, there was an accident. Initially 563

1 workers were said to have been contaminated by way  
2 of inhalation with alpha radiation.

3 The number was quickly reduced to  
4 195 exposed workers.

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

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

11 Inhalation of radioactive material  
12 has no relation to the CNSC's dose regulations  
13 standard.

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

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

24 I was a former nuclear worker from  
25 Port Hope.

1                   I have suffered a multitude of  
2 problems, and I still do. Some are life  
3 threatening.

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

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

9                   And this is all prior to cancer --  
10 cancer, I should say. You know, I mean, I don't  
11 have cancer yet. I have that to look forward to by  
12 the standards.

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

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

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

20                   I've had surgery to my face. I've  
21 had templates to rebuild bone structure that has  
22 been deteriorated.

23                   In 2001, I had lung surgery. I  
24 was on oxygen. I had lost a third of my  
25 bodyweight, and I was not expected to survive.

1                   In 2007 -- by the way, I did make  
2 it.

3                   In 2007, I was tested for uranium  
4 exposure by the Medical Research Centre, urine  
5 analysis testing. I was one of nine tested.

6                   They discovered that I inhaled U-  
7 234. Enriched 235, 238 were discovered, but  
8 unexpectedly U-236, spent reactor fuel, dirty fuel,  
9 it was present in my body.

10                  Now, some time later at a hearing  
11 for relations at Cameco, the company was forced to  
12 admit that they were recycling this dirty uranium.

13                  Spent reactor fuel with dirty  
14 fuel, it has plutonium, polonium in it.

15                  Now, they were doing this without  
16 the knowledge of the CNSC.

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

23                  Now, the testing of these nine  
24 people, including civilians, may be indicative that  
25 a majority of the population has been exposed to

1 inhalation, and further testing the Port Hope  
2 population is needed to verify this.

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

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

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

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

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

20 And the most immediate example of  
21 that is our children.

22 Never in the history of mankind  
23 have we seen so many young children sick or dying  
24 of illnesses and disease usually reserved for  
25 adults.

1 Additional nuclear reactors at  
2 Darlington are only going to intensify the problems  
3 in regards to exposure and the health of the  
4 population.

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

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

11 This does present an impact on our  
12 Health Care System. I'm present -- present myself  
13 as evidence to that.

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

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

24 Now, April 26, the anniversary of  
25 Chernobyl and now we have Japan. And I am pretty

1 sure now if we even have a smaller incident in  
2 Canada, this would be the end of the industry.

3 And right now if it was, we have  
4 no backup resources to produce that extra power  
5 that we're going to need. We have to look at  
6 something differently.

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

16 I have through experience, learned  
17 that they do protect the industry themselves and  
18 CNSC's relation with the industry has become  
19 dangerously biased.

20 For example, I refer to the  
21 previous mentioned incident of spent reactor fuel  
22 without a licence being used in Cameco.

23 And over the years, I've heard a  
24 lot of things, unbelievable and this comes from the  
25 companies in Port Hope. This comes from the CNSC.

1 I'll just repeat a few of them to let you know just  
2 how silly it gets. I mean, what do they think of  
3 the people here? What do they think of us?

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

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

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

18 And through all the comments,  
19 I've -- my very, very favourite. One said -- a  
20 lady said, a CNSC staffer, "I am so very, very  
21 sorry for what has happened to you and I say this  
22 personally and not on behalf of the CNSC." That  
23 said it all to me in a nutshell.

24 Now, the CNSC has not answered  
25 many questions that I put to them over the last ten

1 years to include an investigation into exactly what  
2 happened to me while I was at Zircatec, now Cameco,  
3 that left me contaminated, sick, disabled, no  
4 longer employable. Who's responsible for this?  
5 The company, an individual?

6                   Somebody holds responsibility and  
7 had control over what actually did occur and they  
8 have never had to answer to any authority.

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

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

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

21                   The U.S. has paid out 50 billion  
22 dollars in compensation for nuclear injuries and  
23 illnesses. Canada has no problem -- or no program.  
24 Going to the Workers' Safety Insurance Board as Ms.  
25 Thompson suggested, I've been there. They don't

1 have a clue about nuclear. They go back to the  
2 company for their answers and I'm sure you can  
3 imagine what will happen out of that.

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

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

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

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

24 We -- the demand on Darlington for  
25 nuclear fuel will ensure that Port Hope's nuclear

1 waste cleanup will continue or after that cleanup  
2 is done, the company or the nuclear industry there  
3 will continue to blanket the town with fine  
4 radioactive dust. And for what reason? Because  
5 they're going to have to clean it up again one day  
6 then.

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

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

20                              It's silent, it's invisible,  
21 odourless and usually tasteless until it's too  
22 late.

23                              Am I running out of time, sir?

24                              CHAIRPERSON GRAHAM: You have  
25 about three minutes.

1                   MR. RUDKA: Very good. Thank you.  
2 Well, I'm just going to skip down then. I think  
3 that at this time for the cost of nuclear and the  
4 risk and the danger of population and illness and  
5 politics around it, I have to wonder, why are we  
6 preparing to do it again?

7                   This area of Darlington could be  
8 the start of some new energies. The change will  
9 have to occur one day. If not, we will be burning  
10 coal again. And we got to start the transition  
11 immediately.

12                   And the cost of risk of nuclear  
13 is not present with renewable energy. And the cost  
14 of renewable energy will decrease with production.  
15 The changeover to new power sources will create  
16 tremendous new employment opportunities if it's  
17 approached with the intent to become a world leader  
18 in the field.

19                   And Darlington on the Lake is a  
20 good location for wind, solar, LGs for biomass. It  
21 could be a new-age Darlington.

22                   In closing, last week my son  
23 watched a documentary, "Hiroshima, The Day After".  
24 He told me that he was quite shocked to see the  
25 injuries of these people after the event.

1                   He said knowing that the Japanese  
2 were bombed, he explained, but the injuries, the  
3 skid damage, burns and lesions and the damaged  
4 faces, he said, that's exactly how I appear to him  
5 when I was suffering the worst stages of my  
6 exposure to uranium radiation.

7                   I guess, the moral of this is, I  
8 would -- I expect would be that we don't need  
9 atomic weapons to initiate and achieve the same  
10 horrified results as we have managed to inflict the  
11 same damage on our own people while using nuclear  
12 for peaceful purposes. Thank you.

13                   CHAIRPERSON GRAHAM: Thank you  
14 very much, Mr. Rudka.

15                   Questions from Panel members,  
16 Madam Beaudet?

17                   --- QUESTIONS BY THE PANEL:

18                   MEMBER BEAUDET: Thank you, Mr.  
19 Chairman. I would just like to check with you a  
20 few things.

21                   When you were talking about the  
22 Monarchs that you found dead and with the pipe not  
23 being located properly on the beach, where exactly  
24 was that, in Clarington?

25                   MR. RUDKA: No, that was in Port

1 Hope. It's a drainage pipe that comes down from  
2 the welcome site down into the lake near Brant's  
3 Creek. That would be in -- it's near actually Port  
4 Hope really.

5 MEMBER BEAUDET: And you did  
6 report it and nothing was done?

7 MR. RUDKA: No, I took this as a  
8 personal observation. I've reported some other  
9 things in the past that I've seen and nobody has  
10 really done much about it. One was a leak at a  
11 tank down in Port Granby and it wasn't taken very  
12 seriously.

13 So, no, I just noted it, knowing  
14 the pipe was going to go out into the lake. And,  
15 well, I've told you about it today, ma'am.

16 MEMBER BEAUDET: What would  
17 be -- you said that there should be a new vision of  
18 how to approach people that are affected in their  
19 work.

20 We had earlier, some  
21 representative of unions and I would like to hear a  
22 little bit from your experience what would you  
23 expect to see? I mean we have to progress  
24 obviously.

25 MR. RUDKA: Well --

1                   MEMBER BEAUDET:  What would be  
2 your recommendations?

3                   MR. RUDKA:  I think it has to go  
4 beyond the unions.  A union unfortunately can be  
5 corrupt in a small town it seems to be.

6                   My union, what they did is when  
7 they found out I was sick, they dismissed me, so I  
8 have no union covering me and I'm basically on my  
9 own.

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

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

14                  MEMBER PEREIRA:  Thank you, Mr.  
15 Chairman.  You raise a number of points about  
16 impacts of the nuclear industry along the lake and  
17 you talk -- one of the issues that you talk about  
18 is contamination in the lake and the particular --  
19 the levels of tritium in the lake.

20                  I believe in the Environmental  
21 Impact Statement, Ontario Power Generation makes  
22 estimates, a level of tritium in a lake, a true  
23 operation of the reactors in lake -- Ontario Power  
24 Generation reactors in the lake, can OPG quote the  
25 levels that -- that are predicted in the lake?

1 (SHORT PAUSE)

2 MEMBER PEREIRA: While that is  
3 being checked on I'll make a couple of other  
4 observations and go to another question. We spoke  
5 earlier this afternoon to -- or rather we had an  
6 interventions this afternoon from the Power Workers  
7 Union and the Canadian Nuclear Workers Council,  
8 which is an umbrella body for unions in the nuclear  
9 industry right across Canada. And we asked them  
10 about health effects and the -- what had been  
11 reported by their workers. And -- and they came up  
12 with a reasonable assurance that they saw no  
13 evidence of major problems in -- with health of  
14 workers.

15 Now, yours is a special case, but  
16 certainly they didn't come up with reports of  
17 persistent problems or chronic problems. That's  
18 the impression they gave us, but we took that at  
19 face value. So we are pleased to hear from you  
20 about your real experience and, you know, which is  
21 different from what they said. But you say, which  
22 union were you with? Were you with the Power  
23 Workers Union or some other union?

24 MR. RUDKA: No, I was with another  
25 union, I was with the Steelworkers Union.

1                   MEMBER PEREIRA: Okay. I see.  
2   Going on from there then, I'd like to go to the  
3   CNSC and the comment on health impacts at doses up  
4   to 50 millisieverts per year the Canadian radiation  
5   dose limit is 50 millisieverts per year and I  
6   believe it's 100 millisieverts in five years; is  
7   that correct? So could you comment on what level  
8   of protection that gives in terms of health  
9   impacts?

10                  DR. THOMPSON: Patsy Thompson for  
11   the record. As you mentioned the Radiation  
12   Protection Regulations do set limits for workers at  
13   50 millisieverts per year or 120 -- or 100  
14   millisieverts over a five-year period. These  
15   limits are based on epidemiological studies that  
16   have been done and reviewed by international  
17   experts showing that for chronic exposures of  
18   radiation, that health effects are not observable  
19   in relation to the general population.

20                  So the dose limits are established  
21   at a level where health effects are not expected.  
22   And in addition to that, the CNSC regulations  
23   require that radiation protection programs be in  
24   place at each facility and one element of the  
25   Radiation Protection Program is a requirement -- an

1 ALAR program. And that has resulted in doses of  
2 nuclear energy workers in Canada that are well  
3 below the dose limits, either the five-year limit  
4 or the annual limit.

5 MEMBER PEREIRA: Just to follow up  
6 on that then, in the United States for workers in  
7 the nuclear industry, what are the dose limits?  
8 Are they comparable or are they lower?

9 DR. THOMPSON: Patsy Thompson for  
10 the record. We'll confirm tomorrow, but if I  
11 recall well, the dose limits in the States and in  
12 many other countries, are based on the ICRP  
13 recommendations so they would be the same as the  
14 Canadians regulations, but we will confirm  
15 tomorrow.

16 MEMBER PEREIRA: So what you're  
17 saying is they're likely to be 50 millisieverts per  
18 year?

19 DR. THOMPSON: Patsy Thompson,  
20 that's correct, but we will confirm tomorrow.

21 MEMBER PEREIRA: But you will  
22 confirm tomorrow.

23 CHAIRPERSON GRAHAM: Go back to --  
24 Mr. Pereira, I think I'll give that an undertaking  
25 so we can track everything. That will be

1 undertaking 42 for tomorrow on the comparisons with  
2 the U.S. on dose rates.

3 MEMBER PEREIRA: Well, it's  
4 probably a good idea to do the U.S. and the  
5 international community so maybe ICRP would be a  
6 good thing to quote and -- and the U.S. to go along  
7 with that, just to put it in context, the  
8 intervention we've had today.

9 CHAIRPERSON GRAHAM: And number  
10 42.

11 MEMBER PEREIRA: Thank you. Can  
12 we go back to Ontario Power Generation, do you have  
13 the tritium in Lake Ontario as resulting from the  
14 operation of nuclear generating stations on the  
15 lake?

16 MS. SWAMI: Laurie Swami. We did  
17 actually provide this information in IR-276 for  
18 reference. There's a long explanation of the  
19 calculation that was done, but for the NND itself,  
20 we estimate it to be in the range of four to five  
21 becquerels per litre. And this is assuming the  
22 bounding numbers in terms of the releases from the  
23 NND. But when you compare that to the total from  
24 the lake, we estimate it somewhere in the range of  
25 seven becquerels per litre and of course this is

1 versus the current expectation of 7,000 becquerels  
2 per litre or the new standards which would be 100  
3 becquerels per litre. So that -- that's what we  
4 compare to.

5 MEMBER PEREIRA: Thank you. I am  
6 aware that you did supply it and in response for an  
7 information request for the full explanation of the  
8 basis for your calculation, but I wanted to put it  
9 on the record in the context of this intervention.  
10 And there are many other interventions that are  
11 coming up in which the concern about tritium  
12 releases into Lake Ontario are raised again and  
13 again and the concern on the part of the public  
14 that these -- this station and other stations are  
15 posing a hazard to the health of Canadians who use  
16 the lake for recreation and drinking water.

17 So I think it's good to put it on  
18 the record and so I may ask you the question again.  
19 So -- just to make sure that for the participants  
20 who are in the hearing room at the time, they hear  
21 it -- the intervention and they hear what the  
22 applicant is -- assessment indicates. Thank you  
23 very much for your patience. Thank you, Mr.  
24 Chairman.

25 CHAIRPERSON GRAHAM: Thank you

1 very much. Now, we'll go to the floor and I will  
2 ask -- first of all, I'll ask OPG if they have any  
3 questions of Mr. Rudka.

4 MR. SWEETNAM: Albert Sweetnam, no  
5 questions.

6 CHAIRPERSON GRAHAM: Thank you.  
7 CNSC, do you have any questions for Mr. Rudka?

8 DR. THOMPSON: Patsy Thompson, no  
9 questions, thank you.

10 CHAIRPERSON GRAHAM: Government  
11 departments, federal/provincial? If there are not  
12 then we will then go to intervenors' questions and  
13 I have one and Derek Kelly of FARE. Oh, I guess  
14 I've got two. So Derek Kelly of FARE, you take the  
15 microphone first, sir, and then -- and then we have  
16 Joanne Bull after that from Lake Ontario  
17 Waterkeepers. Mr. Kelly?

18 --- QUESTIONS BY THE INTERVENORS:

19 MR. KELLY: Thank you, Mr. Chair.  
20 Derek Kelly of Port Hope Families Against Radiation  
21 Exposure. I have two questions. The first  
22 question is regarding the U-236 in urine.  
23 Understanding that apparently all Canadians and I  
24 suppose then nuclear workers would have that, I'm  
25 wondering where we could find the studies that have

1 sampled and shown that there is that uranium --  
2 type of uranium in urine?

3 And the other question is how is  
4 the Alpha or how are Alpha particles and Beta  
5 particles measured in nuclear workers? Thank you.

6 CHAIRPERSON GRAHAM: Thank you.  
7 Your first question, I go to Dr. Thompson. Where  
8 can this information be obtained? Is it on the  
9 internet somewhere or a website somewhere or is it  
10 something that we maybe get from Health Canada;  
11 maybe you could explain to Mr. Kelly.

12 DR. THOMPSON: Patsy Thompson for  
13 the record. From the gentleman's question if -- I  
14 have the impression that I probably -- my answer  
15 was misleading. What I said was that there is  
16 uranium naturally occurring in urine and that the  
17 levels measured in Port Hope were low and in the  
18 range of natural background concentrations. I did  
19 not say that U-236 was part of that mix. I said  
20 that the ratios measured were near the detection  
21 limits and were uncertain.

22 CHAIRPERSON GRAHAM: Is there a  
23 study or something that he can refer to or the  
24 public can refer to?

25 DR. THOMPSON: I will check --

1 Patsy Thompson. I will check with the -- the  
2 Health Canada -- our Health Canada colleagues for  
3 the information and I'll look through the  
4 information that staff had given the Commission  
5 when the results were reported to the CNSC.

6 CHAIRPERSON GRAHAM: Thank you.  
7 That will be undertaking 43.

8 And when can you come back?  
9 Tomorrow or the next day; when would be the most  
10 opportune time so Mr. Kelly can refer back to this?

11 DR. THOMPSON: Patsy Thompson. We  
12 will try to reach our Health Canada colleagues  
13 tomorrow morning and when we resume the hearing  
14 tomorrow afternoon we'll be able to provide a  
15 timeline.

16 CHAIRPERSON GRAHAM: Good. We're  
17 going to try and do undertakings every morning, so  
18 we'll put it on the agenda for Friday morning for a  
19 report back.

20 Mr. Kelly, you had one other  
21 question and I'm sorry. I apologize I forget what?

22 MR. KELLY: Hello. It was  
23 regarding how nuclear workers are monitored for  
24 Alpha and Beta particles particularly if they're  
25 inhaled or ingested.

1                   CHAIRPERSON GRAHAM: Thank you.  
2 That -- there's been a lot of debate and a lot of  
3 information out regarding the incident at Bruce,  
4 and perhaps Dr. Thompson could explain how that is  
5 -- how that is measured.

6                   DR. THOMPSON: Patsy Thompson for  
7 the record. The staff is -- has put together a  
8 document that explains the different methods of  
9 measuring dose for workers for different types of  
10 -- of exposures, different types of radiation.  
11 That document is being finalized and will be  
12 presented to the commission, I believe, at the May  
13 commission meeting. But I will -- we have a good  
14 draft document. I'll get the information, and  
15 we'll be able to provide the information for alpha  
16 particles and beta particles in the next couple  
17 days.

18                   CHAIRPERSON GRAHAM: Thank you.  
19 Joanne Ball -- or Bull, I'm sorry.

20                   MS. BULL. Thank you, Mr. Chair.  
21 I just wanted to confirm in response to the  
22 discussion about Tritium in Lake Ontario, that the  
23 concerns that have been raised are not limited to  
24 Tritium, they are -- there's a long list of  
25 contaminants that are emitted to the lake,

1 including benzene, ammonia, and hydrazine, so just  
2 to confirm in light of that comment. Thank you.

3 (SHORT PAUSE)

4 CHAIRPERSON GRAHAM: Dr. Thompson,  
5 do you want to respond to that?

6 DR. THOMPSON: My apologies. We  
7 were wondering if you had given an undertaking  
8 number for the dosimetry, and we were trying to see  
9 if -- would that be number 44 or --

10 CHAIRPERSON GRAHAM: I didn't give  
11 it an undertaking because you said it was going to  
12 be presented to the Commission in May, and it  
13 wasn't going to be ready until then I didn't think,  
14 so that was to a regular commission meeting, this -  
15 - we would like to have it, but perhaps if it's not  
16 going to be ready until May, we can still get an  
17 undertaking number, and then if it's not ready, it  
18 will be ready and it will be posted so that  
19 everyone will have the benefit. So I will give it  
20 Undertaking Number 44.

21 DR. THOMPSON: Perhaps, sir, if I  
22 could clarify. The document is nearly final and  
23 will be submitted to the Commission, but what I was  
24 proposing is that we extract from that document the  
25 part that relates to alpha and beta and provide it

1 in the next couple of days. We could do that.

2 CHAIRPERSON GRAHAM: That's  
3 clarifying. Thank you very much. Ms. Bull, we  
4 didn't get your question. We apologize because  
5 we're working on that Undertaking Number 44.  
6 Perhaps you would like to re-put it.

7 MS. BULL: Thank you, Mr. Chair.  
8 It was actually just a clarification. Thank you.

9 CHAIRPERSON GRAHAM: Thank you  
10 very much. And, Faye Moore, I think you're the  
11 last one that has questions regarding this  
12 intervention.

13 MS. MOORE: Thank you. I wanted  
14 to make a comment, if I can, about the UMRC  
15 testing, that one of the key responses from Health  
16 Canada and CNSC was that the test results were the  
17 same as you would find in people across Canada.

18 CHAIRPERSON GRAHAM: Could you put  
19 it in a question, please?

20 MS. MOORE: And they were  
21 referring to the levels and it's the type of  
22 uranium that's really critical, and that's what Dan  
23 Rudka is referring to as well is the content in the  
24 urine.

25 One of the concerns that has come

1 to us as a health committee over the years from  
2 employees and former employees of Cameco and  
3 Ziratec, now Cameco too, is the -- the lack of  
4 monitoring around health as employees age and then  
5 go into retirement.

6 And some people have thought they  
7 observed early onset of disease, and there are  
8 times when the workers don't have benefits. So I  
9 don't have specifics on that, but one of my  
10 questions would be with OPG is whether they do  
11 health monitoring of their employees, those who are  
12 in the workforce, how closely they do that?

13 Do they do isotopic monitoring of  
14 their urine to detect if ratios start to become a  
15 problem or if there is anthropogenic material  
16 coming in the urine, and if they follow people into  
17 retirement and really monitor over the long term  
18 because some workers retire when they're 60, and if  
19 they develop cancer and die by the time they're 62  
20 and there's a trend of that, that's something we  
21 really should know about. Thank you.

22 CHAIRPERSON GRAHAM: OPG, you care  
23 to respond, please?

24 (SHORT PAUSE)

25 MS. SWAMI: Laurie Swami. First

1 of all, I think I could answer part of the question  
2 with respect to how we monitor. The question, I  
3 believe, was do we look for anything in urine, and  
4 -- and I know that Dr. Thompson will be providing  
5 an overview of how dose is monitored for employees.  
6 However, I could mention that we have several  
7 different techniques that we use for monitoring  
8 exposures.

9                               We use urinalysis, we use fecal  
10 sampling, and we use whole body -- whole body  
11 counting techniques, devices that employees step  
12 into to monitor their exposures. Those are used to  
13 calculate and ensure that the health effects are  
14 understood and the dose assignments are correct.  
15 And that's a requirement of our programs, and they  
16 must fulfil that as nuclear energy workers.

17                               I'm not speaking specifically to  
18 any particular radionuclide. It covers a wide  
19 range.

20                               From a health monitoring  
21 perspective, I can't comment on that today. I can  
22 verify. I don't believe we have an extensive  
23 program of monitoring based on radiation exposure  
24 at this time, but I need to confirm that, and I can  
25 take that as an undertaking. We will have, I

1 believe, someone here tomorrow from our health  
2 physics department who can speak to that more  
3 clearly.

4 CHAIRPERSON GRAHAM: Thank you.  
5 That will be Undertaking Number 45. Thank you very  
6 much, Ms. Moore. I realize tonight has been a lot  
7 of discussion around Port Hope, and I've been very  
8 lenient and the hour is getting long and I still  
9 have another presenter, but I certainly will hear  
10 Ms. Lawson and Mr. Haskill. One question each. If  
11 you would honour that, I would appreciate it.

12 MS. LAWSON: I'm puzzled because  
13 of Ms. Thompson's statement about the uranium in  
14 Port Hope citizens being similar to the levels of  
15 uranium because it's well-known with -- that in  
16 Port Hope there is no barrier and Norm Rubin of  
17 Energy Probe together with a CNSC senior staff  
18 member together measured that the levels citizens  
19 were exposed to in Port Hope were six times the  
20 levels a citizen around a nuclear generating plant  
21 would be exposed to.

22 So I don't understand Ms. Patsy  
23 Thompson's reference to uranium in Port Hope  
24 citizens being the same as the -- the measurement  
25 being the same as anyone else. It makes no sense

1 to me, Mr. Chairman.

2 CHAIRPERSON GRAHAM: Thank you  
3 very much for your comments on the record. Mrs.  
4 Haskill. I said Mr. Haskill. Is it a Mrs.  
5 Haskill, or have I got this not -- there's one more  
6 person has asked to speak. Mr. Haskill, you've  
7 waved your hand that you're not. I know -- we get  
8 our information here via Blackberry, and if there's  
9 none, thank you very much. That ends your  
10 presentation, Mr. Rudka, and thank you very much  
11 for coming. Always give you the time that you  
12 need, and thank you very much. Tonight you don't  
13 have to travel as far, but safe travels.

14 With that, we will go to the last  
15 presenter of the evening, and that is in PMD 11-  
16 P1.178, and it's Ms. Howarth. I hope I pronounced  
17 that correctly. Oh, it's just Howarth. Okay, I --  
18 thank you very much. The floor is yours, ma'am.

19 --- PRESENTATION BY MS. HOWARTH:

20 MS. HOWARTH: Thank you so very  
21 much for the opportunity of presenting to you  
22 tonight. And I'm going to talk about the  
23 unnecessary need of new build of nuclear reactors  
24 at Darlington, which is under review.

25 For my energy needs to be

1 satisfactory. That energy must come from the  
2 safest, the most economical, and above all, come  
3 from the most sustainable source available. The  
4 number one action before looking for energy -- any  
5 energy sources, is unquestionably the one which  
6 holds the most common sense and logic. And that is  
7 investing in conservation and energy efficiency.  
8 This means obtaining the desired temperature, let's  
9 say for heating my home or a building using the  
10 least amount of energy possible, and this can be  
11 done with insulation, so -- you know, we don't have  
12 to be looking at a facility necessarily.

13                               So I'll be speaking on a few  
14 points. 1. Nuclear energy is the most expensive  
15 and the most dangerous form of energy. 2.  
16 Conservation, energy efficiency, hydro, and  
17 renewable energy will meet our energy needs for  
18 Ontario. Renewable is doable in Ontario, and  
19 economically viable. Lake Ontario is needed for  
20 human life, and global warming solution is not  
21 nuclear power due to the greenhouse gas emissions  
22 from nuclear's lifecycle.

23                               So number 1, nuclear energy is the  
24 most expensive and most dangerous form of energy.  
25 Nuclear energy is the most expensive and dangerous

1 form of energy. OPG's environmental review only  
2 takes into consideration some of the aspects of  
3 nuclear and ignores important, pertinent costs as  
4 well as the dangers. The costs of building new  
5 nuclear will have -- which have been ignored, will  
6 become the responsibility of provincial ratepayers,  
7 federal taxpayers, and future generations. In  
8 fact, these ignored costs are in reality a form of  
9 subsidy to the nuclear industry.

10                   There are costs and risks that  
11 have been underestimated or ignored by OPG in the  
12 environmental impact statement or by the Ontario  
13 government. These negatives will be addressed  
14 under the following headings. I'm going to look at  
15 projects costs, construction cost overruns,  
16 accident insurance and storage of radioactive waste  
17 cost. So the project cost.

18                   The Ontario Power Authority is  
19 Ontario's electricity planning agency. In 2005  
20 they advised the Ontario government that rather  
21 than having energy generated from green energy  
22 sources, building new reactors would be more cost  
23 effective. On that information OPG was directed to  
24 start an environmental review by the Ontario  
25 government. So in 2009 the Ontario government

1 became aware that the purchase of new reactors  
2 would be over 26 billion. This is after OPA's  
3 claim in 2005 that the cost of new reactors would  
4 be about \$6 billion, so the government therefore,  
5 halted the purchase of new reactors.

6                   So don't energy suppliers have to  
7 look at all these extra costs? The nuclear  
8 industry must include all costs, past and present  
9 that are attached to the building of nuclear power  
10 plants, as well as including the decommissioning of  
11 a plant and the storage of waste.

12                   Construction cost overruns. The  
13 nuclear industry has a history of cost overruns  
14 when it comes to building reactors, even on today's  
15 energy bills there is an amount being charged every  
16 month to pay for reactors, which were built decades  
17 ago. It is unquestionable -- unconscionable,  
18 sorry, to be giving a quote and being awarded the  
19 contract when the nuclear industry can turn around  
20 and change billions -- and charge billions more due  
21 to the inability or even the unwillingness to give  
22 accurate estimates as to the true cost. I don't  
23 believe any other energy producer is allowed to  
24 charge and collect for construction cost overruns.  
25 The nuclear industry must be forbidden to do so as

1 well.

2                                   Accident insurance. There is the  
3 real and distinct possibility of nuclear accident.  
4 An accident would cause environmental damage and  
5 personal injury, including death and most likely  
6 all of these. The nuclear industry is not able to  
7 get insurance and only assumes partial  
8 responsibility in case of an accident. So the  
9 federal government and the taxpayers, as well as  
10 the ratepayers, and possibly future generations  
11 will assume all costs above that minimum amount.

12                                   Another word for others being held  
13 responsible for the costs incurred from the nuclear  
14 accident again is subsidy to the nuclear industry.  
15 This subsidy or perk is not available to any other  
16 energy producers. Providing their own insurance is  
17 a cost that must be included in the cost of new  
18 reactors. The federal government must revamp the  
19 liability legislation for the nuclear industry, and  
20 the industry must be accountable for their own  
21 mishaps.

22                                   Then there's storage of  
23 radioactive waste costs. The costs of  
24 decommissioning a nuclear power plant and storage  
25 of radioactive waste is a cost which much be

1 included when calculating the price of building a  
2 nuclear reactor, and the price of energy to the  
3 consumers. If OPG has done this -- has not done  
4 this, then it must, otherwise this is again giving  
5 the industry an unfair advantage over safer,  
6 greener and less expensive types of energy  
7 production.

8                   Also if this is done, it is in  
9 fact another -- if this is not done, it is in fact  
10 another subsidy to the nuclear industry, which  
11 again, it's the taxpayers and the ratepayers, and  
12 even future generations, which will be on the hook  
13 for.

14                   This -- I noticed somebody did  
15 this last week. I guess this way. How do I get  
16 this to show, there it is. Okay. So this shows  
17 the cost of efficiency and conservation, which is  
18 three cents a kilowatt hour, and this is combined  
19 heat and power, six cents. And this is renewable  
20 power, which could come from Quebec, because they  
21 have to supply to Ontario, so nine to three cents  
22 an hour -- a kilowatt hour, and new nuclear is 21  
23 cents. So it is -- it's definitely the most  
24 expensive.

25                   So in summary, you are the members

1 of the panel and you must not approve new reactors  
2 before OPG can prove that conservation and energy  
3 efficiency have been maximized, which they  
4 absolutely have not; that nuclear is cheaper than  
5 any other green energy producers; that there will  
6 be no construction cost overruns, and if there are  
7 it's the nuclear industry that will assume full  
8 responsibility for these. That accident insurance  
9 will be the full responsibility of the nuclear  
10 industry, storage costs and radioactive wastes will  
11 be included in the upfront costs of nuclear. And  
12 the lifecycle of nuclear is not green and it is  
13 greenhouse gas emitting. So all information must be  
14 made public and able to be assessed and  
15 scrutinized.

16                                   The second one I'm going to look  
17 at is the conservation, energy efficiency, hydro  
18 and renewable energy, which will meet our energy  
19 needs. It is mindboggling to think that in 2011  
20 I'm being asked to believe that not more can be  
21 done to improve conservation and energy efficiency.  
22 The number 1 action again -- I've said it before,  
23 before looking at energy sources, the action which  
24 holds the most common sense and logic is  
25 conservation and energy efficiency. So insulating

1 public, insulation and insulating public and  
2 commercial buildings and homes, for example, would  
3 have a tremendous input -- impact on reducing the  
4 amount of energy, which is required.

5                   In short, I would not need to use  
6 anywhere near the same amount of energy that I  
7 would -- that I use now to maintain the same  
8 temperature, let's say, that I use now.

9                   Now, wind power in Ontario and the  
10 hydro from Quebec can produce 100 percent renewable  
11 energy 24/7, just that on its own. When the wind  
12 is stronger, water can be stored in reservoirs in  
13 Quebec, and then when the wind is light, this water  
14 can be released to generate power.

15                   In addition there is energy from  
16 utilizing combined heat and power, where both heat  
17 and electricity could be produced from one energy  
18 source. So nuclear is untenable, irrational and  
19 unsustainable energy choice.

20                   So renewable is doable in Ontario  
21 and economically viable. The first step towards  
22 100 percent renewable energy is to maximize  
23 conservation as I said before, and energy  
24 efficiency. I can't stress that enough, that  
25 that's where we really have to be putting some

1 effort into and it's not happening, i.e., the  
2 insulation so that we use less energy to obtain the  
3 desired temperatures or whatever that we want.

4                   It is economically wise and  
5 prudent to transition to renewable energy. Along  
6 with all the negative impacts of nuclear energy  
7 pointed out throughout this presentation and  
8 others, renewable energy would cost 12 to 18  
9 percent cheaper than building a new reactor at  
10 Darlington and creates 27,000 jobs because that  
11 always comes up.

12                   These and some of the findings by  
13 Pembina Institute and Canadian Environment Law  
14 Association and Green Peace in their study of  
15 August, 2010 -- so it's very clear there -- OPA  
16 found over 15,000 megawatts of renewable energy  
17 either in the planning or development phase. In a  
18 20-year period the integrated power supply plan  
19 envisioned half that amount. So even knowing this,  
20 the growth of green energy remains blocked for two  
21 reasons. In order to ensure space for nuclear  
22 energy, renewable energy is capped at 5,312  
23 megawatts over the 20 years -- over the next 20  
24 years or less than eight percent of the electricity  
25 supply mix.

1                   Wind development will come to a  
2 halt because the IPSP are accommodating the  
3 building of new nuclear and this will be over 50  
4 percent of the supply mix. So, you know, there's  
5 no place on the grid for -- for the renewable --  
6 the green energies, but the jobs are there and more  
7 jobs.

8                   So it is the obligation, I think,  
9 of this panel to follow the federal law and policy  
10 on sustainable development. This law requires a  
11 public assessment of the need, impacts or cost  
12 effectiveness of building new reactors at  
13 Darlington and this must take place before the  
14 project proceeds. This panel must demand a public  
15 assessment before approving the project. The  
16 people of Ontario deserve the opportunity to  
17 objectively examine alternatives to nuclear. But  
18 in 2006, the Ontario Government secretly passed a  
19 regulation exempting its electricity plan from a  
20 provincial environment review. So people have been  
21 robbed of this opportunity.

22                   Lake Ontario is needed for human  
23 life. Now, fresh water is a finite and essential  
24 resource. It is a life-sustaining and critical  
25 resource. It is needed for human life and there

1 are no ifs, ands or buts about it. What is dumped  
2 in Lake Ontario must be closely watched and this is  
3 our source -- as this is our source of drinking  
4 water.

5 I support the letter by Lake  
6 Ontario Waterkeepers, which I've read and it's  
7 dated the 8<sup>th</sup> of October, 2010, which was sent to  
8 the members of the joint -- project Joint Review  
9 Panel, that's Debra Myles and Kelly McGee. Yeah,  
10 they would have received the letter. So the letter  
11 explains the critical importance of fresh water in  
12 the world and how Lake Ontario is the 14<sup>th</sup> largest  
13 lake in the world -- fresh-water lake in the world.  
14 The lake borders Canada and the United States with  
15 a total of 1,000 kilometres of shoreline. It is  
16 linked to the Great Lakes through the Niagara River  
17 and it drains through the St. Lawrence River to the  
18 Atlantic.

19 That letter explains very well the  
20 importance of the lake and how the health of Lake  
21 Ontario is essential to the ongoing health and  
22 prosperity of Ontario and the entire Great Lake  
23 region. It serves as fish and wildlife habitat; it  
24 is the space for transportation and recreation. It  
25 is absolutely critical as it provides the drinking

1 water for millions of Canadians and Americans.

2                   The letter also points out that  
3 the lake is threatened by a number of sensors, most  
4 linked to the failure and respect -- to respect and  
5 nurture it. It points out that the OPG prefers the  
6 once through cooling water option and of any  
7 alternative, this would be the most damaging impact  
8 on the lake.

9                   Also the proposed infilling --  
10 infilling of 40 hectares of the lake has been  
11 inadequately justified and alternatives have not  
12 been sufficiently considered in the environmental  
13 impact statement. The Waterkeepers state that:

14                   *"The following important*  
15                   *information is missing from a*  
16                   *hydro-geological review and*  
17                   *that this is where serious*  
18                   *structural concerns regarding*  
19                   *the incomplete and premature*  
20                   *EIS and the uncertainty that*  
21                   *characterized the public*  
22                   *comment period. Waterkeepers*  
23                   *submits that the EIS is*  
24                   *incomplete and cannot form*  
25                   *the basis for a valid*

1                                    *environmental assessment*  
2                                    *decision."*

3                                    I don't know how much time I have  
4 left so I'll go to the -- global warming solution  
5 is not nuclear power due to greenhouse gas  
6 emissions from the nuclear lifecycle. So the major  
7 reason for my opposing the replacement of  
8 Darlington nuclear power station with a new  
9 facility is because of the greenhouse gas  
10 emissions.

11                                   I've heard claims by the nuclear  
12 industry that nuclear is green energy and it is not  
13 greenhouse gas emissions emitting, but this is  
14 false. There are many stages in the lifecycle of  
15 nuclear that are greenhouse gas emitting such as  
16 the mining of uranium, the construction of the  
17 plant, the decommissioning of the reactors and the  
18 storage of nuclear waste. A nuclear power plant  
19 demands all these stages for new construction to  
20 even take place so there cannot be a nuclear power  
21 plant without all these stages and it would be  
22 deceptive to ignore them.

23                                   The facts are not new. In the  
24 winter of 2008, there's an addition of Pacific  
25 ecologists and I think the submission I gave you

1 has a link, and there's an article that's called,  
2 "Nuclear Power is Not Pollution or Emission  
3 Free." This is the way that they state it:

4 *"Lifecycle emissions occur*  
5 *throughout plant*  
6 *construction, operation,*  
7 *uranium mining and milling*  
8 *and decommissioning. Nuclear*  
9 *is not pollution or emission*  
10 *free; every step of the*  
11 *nuclear fuel cycle, mining,*  
12 *development, production,*  
13 *transportation, and disposal*  
14 *of waste, relies on fossil*  
15 *fuels and produces greenhouse*  
16 *gas emissions. A complete*  
17 *lifecycle analysis shows*  
18 *generating electricity from*  
19 *nuclear power emits 20 to 40*  
20 *percent of the carbon dioxide*  
21 *per kilowatt hour of a gas-*  
22 *fired system when the whole*  
23 *system is taken into account.*

24 So again, nuclear power is  
25 greenhouse gas emitting which is causing,

1                    *"Climate change, construction*  
2                    *of new nuclear reactors can*  
3                    *be considered nothing short*  
4                    *of criminal."*

5                    So in conclusion, it just seems  
6 that based on, again, common sense and logic, the  
7 building of the new reactors at Darlington must not  
8 be approved and OPG -- until OPG can demonstrate  
9 that they are needed without a doubt; cheaper and  
10 more effective and most cost-effective compared to  
11 other energy options; do not produce greenhouse gas  
12 emissions in their lifecycle, including mining of  
13 uranium and the storage of the waste.

14                   With most of the negative points  
15 being strongly against the approval of building new  
16 nuclear reactors in Ontario, for one, I will be  
17 terribly disillusioned with the political process  
18 if nuclear new build is allowed to proceed. And  
19 I'm not the only one. I put a large number of my  
20 recreational hours in volunteering and I meet --  
21 the people that I meet that are opposed to nuclear  
22 power, and they're -- like, they're afraid of it  
23 and rightly so.

24                   I can assure this panel that the  
25 majority of the public are fearful of new nuclear.

1 Do not disillusion people more than they are,  
2 refusing the approval of new nuclear will show an  
3 understanding of what people are saying and how  
4 they are feeling. This is an opportunity to turn  
5 the negative public tide and put us on the path to  
6 an environment and economical sustainable future.

7 I wrote this about three weeks ago  
8 and actually, you know, people work full time and  
9 it's so hard to find when you -- when all your  
10 daytime hours are in paid work, to find time. So I  
11 hadn't reviewed it, but I'm pleased with it.

12 But I wrote something this morning  
13 just quickly. I put the other two things are --  
14 the government standards and the OPG standards, I  
15 think, are far too low.

16 The minimum standards that are  
17 quoted in the -- in the studies, many of them are  
18 outdated, and they leave out critical pieces.

19 Dr. Caldicott, she spoke here last  
20 week, and she's a physician. She's not hired by  
21 any industry. And all she has to speak from is the  
22 care of patients and the care of people.

23 And she brought up the tritium,  
24 which is in the water and in the air and penetrates  
25 everything. Only gold could encase it, that could

1 -- wouldn't penetrate.

2                               And then I believe it was  
3 plutonium that settles in the testicles.

4                               There are no safe levels.

5                               So that's one point that I wrote  
6 today.

7                               And the other one -- this one is  
8 not covered in any studies. There's no mental  
9 health studies, and they're virtually nonexistent.

10                              Stress is an accumulation of -- an  
11 accumulation of stresses is what leads to clinical  
12 depression, which is a mental illness.

13                              Fluoride in the drinking water  
14 causes stress.

15                              Having children with these huge  
16 university loans to pay causes stress. Then those  
17 students not finding jobs causes stress.

18                              People that have children are  
19 losing their jobs. That causes stress.

20                              All of -- and family members and  
21 friends coming -- diagnosed with cancer, that  
22 causes stress.

23                              Now, that's an accumulation of  
24 stress, and that is -- those accumulation of  
25 stresses, this is what causes mental illness,

1 depression, which leads to mental illness.

2                                 But this -- when I was here last  
3 week when Dr. Caldicott spoke, you can't -- nobody  
4 tackles the mental stress, but we have them every  
5 day in our lives. We all have them.

6                                 So the common sense -- and I spoke  
7 to my sister this morning. She lives in  
8 Peterborough. And she told me my brother-in-law --  
9 that a co-worker, who is 39 or 40 -- and the man  
10 took on a more -- a job with more responsibility.  
11 He has two young children, a wife.

12                                 And my sister was telling that  
13 this man was falling apart, and he had to take time  
14 off work. He was supposed to come back on Monday,  
15 but he didn't.

16                                 And my brother-in-law, along with  
17 his duties, he's taken over covering for this man  
18 because he's worried about this man and his  
19 concerns.

20                                 Now, I'm to -- we're to tell this  
21 man that tritium is in his -- on top of all the  
22 things that he's probably concerned about -- and I  
23 think that he is suffering probably some kind of  
24 depression.

25                                 Thank you. I'm almost finished.

1                   The tritium in the drinking water  
2 and the air which penetrates everything, you tell  
3 him that.

4                   Tell him also that plutonium -- or  
5 whichever one of those chemicals comes from nuclear  
6 -- will land in his -- will rest in his testicles.

7                   That's enough to send somebody,  
8 anybody, to wherever, the loony bin.

9                   So these stresses, they're real.

10                  No, there are no studies on mental  
11 health because it's too real.

12                  So you are the members of the  
13 panel, and I know you've got common sense, and  
14 we're all living the same thing.

15                  So I'm really -- I know you'll  
16 make the right decisions because it's just common  
17 sense and logic, sense of logic.

18                  Thank you.

19                  CHAIRPERSON GRAHAM: Thank you  
20 very much for your intervention.

21                  I know that you said it was  
22 written three weeks ago.

23                  Many of the things that have been  
24 -- have been answered and covered over the last  
25 seven or eight days of the hearings.

1                                   But there's one thing before I go  
2 to my colleagues.

3                                   You held up a card. Is that an  
4 OPG card with regard to the price that's there?  
5 Because we had information given us the other day  
6 that nuclear power was five-and-a-half cents, and  
7 I'm just wondering, is that an OPG card that you  
8 held?

9                                   MS. HOWARTH: No, it's not an OPG  
10 card.

11                                  CHAIRPERSON GRAHAM: Where --

12                                  MS. HOWARTH: This is from Ontario  
13 Clean Air Alliance.

14                                  CHAIRPERSON GRAHAM: Okay.

15                                  MS. HOWARTH: And actually --  
16 okay. I have a more recent one even, so -- because  
17 the studies keep getting updated.

18                                  But it's the renewable, the  
19 conversation -- because I think the conservation is  
20 the same.

21                                  CHAIRPERSON GRAHAM: Okay.

22                                  MS. HOWARTH: I'll give you this,  
23 or I'll send it to you somehow.

24                                  CHAIRPERSON GRAHAM: No, that's  
25 okay.

1 I just wanted clarification  
2 whether it was OPG --

3 MS. HOWARTH: No, Ontario Clean  
4 Air Alliance.

5 CHAIRPERSON GRAHAM: -- because  
6 the evidence that we had given us was different.

7 Mr. Pereira, do you have any  
8 questions?

9 --- QUESTIONS BY THE PANEL:

10 MEMBER PEREIRA: Thank you, Mr.  
11 Chairman.

12 Thank you for your presentation.

13 Much of what you presented has  
14 been presented, as Mr. Chairman has said, like,  
15 much of it presented by Lake Ontario Water Keeper  
16 in particular, the health and the lake. And many  
17 of those issues -- impact on the aquatic fish and  
18 wildlife habitat has been covered before, fish and  
19 fill -- the lake and fill and the impact on  
20 drinking water in the -- one of the previous  
21 interventions, we talked about tritium in the -- in  
22 the lake.

23 I'd like to go to one of your  
24 closing lines.

25 When you said the majority of the

1 public are sceptical and fearful of new nuclear --  
2 and that's quite a sweeping statement.

3 Ontario Power Generation has done  
4 much in a of consultation with the public in  
5 preparing for this project.

6 I'd like them to comment on what  
7 they -- what they found from their consultation  
8 with the public.

9 MR. SWEETNAM: Albert Sweetnam for  
10 the record.

11 I'll ask Donna Pawlowski to  
12 respond to this question.

13 MS. PAWLOWSKI: Donna Pawlowski  
14 for the record.

15 The -- we've summarized the  
16 results of the communications and consultation  
17 program in our technical support document, which  
18 was submitted in September of 2009.

19 And we found that there was,  
20 particularly in the Municipality of Clarington,  
21 quite a bit of community support for the project.

22 And, yes, there were individuals  
23 who had, as we've heard here, concerns about energy  
24 policy in Ontario and whether the weight that was  
25 given to renewables versus the weight that's given

1 to nuclear, but -- so that was definitely a concern  
2 that was raised by people that came to our  
3 sessions.

4 But overwhelmingly, I'd say  
5 particularly within the Municipality of Clarington,  
6 there's support for the project to proceed.

7 MEMBER PEREIRA: Did you do any  
8 consultation beyond Clarington, more widely -- the  
9 Durham Region?

10 MS. PAWLOWSKI: Yes. Our -- Donna  
11 Pawlowski for the record.

12 Our consultation program covered  
13 the whole regional study area, which extended to  
14 the west, which was into the eastern portion of the  
15 City of Toronto, and as far east as Port Hope and  
16 Cobourg and as far north as Peterborough. And to  
17 the northwest I think we got up into Markham.

18 So the total regional study area  
19 was covered.

20 MEMBER PEREIRA: And the results  
21 were similar, were they?

22 MS. PAWLOWSKI: The results were  
23 consistent.

24 I think the further away we got  
25 from the host communities, Pickering and

1 Darlington, the less familiar people are with  
2 nuclear.

3                               And less familiar people would  
4 say, why are you even coming up to talk to us way  
5 up here in Markham?

6                               And -- but generally consistent  
7 yes.

8                               MEMBER PEREIRA: Thank you.

9                               We did have the Deputy Minister of  
10 Ontario Energy come to speak to us early last week.  
11 And he outlined the province's policy on generation  
12 options. And so that policy was developed by the  
13 Government of Ontario in consultation, so that's  
14 the way we started off the week.

15                               But I'd like to go now back to  
16 Ontario Power Generation to comment on the cost of  
17 nuclear, cost overruns, and the cost justification  
18 of the project in broad terms.

19                               MR. SWEETNAM: Albert Sweetnam for  
20 the record.

21                               In terms of the costs of new  
22 nuclear, as the Assistant Deputy Minister said when  
23 he appeared, he indicated that there was a range,  
24 and that range is derived from two ongoing plants  
25 in the US.

1                   For the Ontario situation, we  
2 cannot actually define the exact costs of new  
3 nuclear because we have not completed the  
4 procurement process. We do not have -- we have not  
5 selected a technology. We do not have vendor on  
6 board.

7                   But the intention is to come  
8 within the range of what is available  
9 competitively.

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

13                   We will proceed with nuclear at  
14 any price. We will proceed with nuclear at the  
15 right price for the Ontario rate payer.

16                   MEMBER PEREIRA: Thank you.

17                   Thank you, Mr. Chairman.

18                   CHAIRPERSON GRAHAM: Madam  
19 Beaudet?

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

22                   I have two points.

23                   The first one is -- I don't think  
24 there are page numbers on your document, so we'll  
25 go by section, section 3, the last paragraph where

1 you mention that the Ontario Government secretly  
2 passed a regulation exempting its electricity plan  
3 for provincial environmental review. I would like  
4 to know exactly what you mean here?

5 MS. HOWARTH: I need to have  
6 that -- I didn't give it a -- what can I say? An  
7 index to that, but I can get you something.

8 MEMBER BEAUDET: You mean  
9 that there is no reference and you'll get a  
10 reference?

11 MS. HOWARTH: That's right.

12 MEMBER BEAUDET: Thank you. The  
13 other ---

14 CHAIRPERSON GRAHAM: Madam  
15 Beaudet, do you want an undertaking on that?

16 MEMBER BEAUDET: Yes, I suppose  
17 so, please.

18 CHAIRPERSON GRAHAM: Yes, we will.  
19 We will give that number 46 for an undertaking for  
20 Ms. Howarth to provide the references. When would  
21 you be able to provide that?

22 MS. HOWARTH: Monday, yeah.

23 CHAIRPERSON GRAHAM: That's  
24 satisfactory. Thank you very much.

25 MS. HOWARTH: Okay. Thank you.

1                                   MEMBER BEAUDET: My second point,  
2 you were referring in your last comments about the  
3 stress and mental health and I believe Ontario  
4 Power Generation has looked at the mental health  
5 with respect to Darlington. And I would like to  
6 have a brief comment on that please?

7                                   MR. PETERS: John Peters, for the  
8 record.

9                                   I think the concept that we have  
10 explained before the Panel is that the health  
11 assessment was done using the World Health  
12 Organizations definition of health and health  
13 effects and we have assessed as a result of that,  
14 physical health, mental health and social well-  
15 being.

16                                  And there's a wonderful table in  
17 the EIS in Section 5 of the human health portion  
18 that walks through and points out, for example, the  
19 assessment of some of the kinds of concerns that  
20 were raised in this presentation are covered off  
21 under such things as feelings of personal health, a  
22 sense of personal safety, satisfaction with your  
23 own community, added towards too -- towards the  
24 Darlington project and its site.

25                                  Potential traffic, nuisance

1 effects other things may come associated with the  
2 project. And a sense of traditional use and  
3 spiritual activities that are particularly  
4 identified with Aboriginal communities.

5                   We develop these ideas not by  
6 ourselves not in isolation, but through studies  
7 with members of the community, particularly in  
8 response to the Durham Nuclear Health Committee,  
9 whose public members were very interested over the  
10 last two environmental assessments in developing  
11 these concepts and then having us go out and  
12 undertake surveys and interviews with members of  
13 the community, professional people in the community  
14 and social organizations to understand how these  
15 dimensions of public health and personal well-being  
16 could be -- could be assessed and understood as  
17 they relate to the project.

18                   MEMBER BEAUDET: When you looked  
19 at the aspect of feelings of personal health, were  
20 there any concerns brought about -- from people  
21 that felt working -- or living near a nuclear site  
22 would bring them concerns about their health?

23                   MR. PETERS: John Peters, for the  
24 record.

25                   I'm going to just remind you that

1 Donna Pawlowski has described the nature of those  
2 studies. What I found particularly interesting  
3 over the years that we worked on this was that we  
4 did individual community meetings as we've  
5 described many, many times.

6                   And we tracked comments by members  
7 of the public who came to those meetings and we've  
8 recorded them in our reports and we find as Donna  
9 has indicated, a broad understanding and acceptance  
10 and a lack of concerns close to the plant and its  
11 function if we think of the well-informed  
12 community.

13                   As you get further away, there are  
14 perhaps less information, but the distance changes  
15 people's concerns as well.

16                   What we do see in the public  
17 attitude research was a more objective measurement  
18 on a periodic basis is that attitudes do not change  
19 dramatically. And there is a broad ground-swell of  
20 acceptance of nuclear and no fear of -- no major  
21 fears.

22                   There is a percentage of people  
23 who are always going to be concerned and fearful of  
24 this particular technology and we accept that as  
25 part of a normal business practice that we have to

1 be responsive to and address on an ongoing basis.

2 Perhaps Donna may have more  
3 specifics that she wishes to add.

4 MS. PAWLOWSKI: Donna Pawlowski,  
5 for the record.

6 I'll just add in the socio-  
7 economic affects, TSD in the appendix. We have the  
8 Public Attitude Survey where we, on a regular  
9 basis, check with people on their attitudes towards  
10 personal and community well-being.

11 And consistently -- particularly  
12 in the local study area, we had 78, 80 percent of  
13 the surveyed population rating their personal  
14 health as excellent or good. And -- and that's  
15 with the full knowledge that they live beside a  
16 nuclear power plant and aware of the -- and just  
17 aware of being beside a nuclear power plant.

18 MEMBER BEAUDET: Thank you.

19 Thank you, Mr. Chairman.

20 CHAIRPERSON GRAHAM: Thank you.

21 I think Ms. Howarth had one  
22 question.

23 MS. HOWARTH: Again, it's the --  
24 about people agreeing with nuclear and mental  
25 health and that aspect. I could do a survey as

1 well and I don't think the figures -- well, I know  
2 that the figures wouldn't come that way -- work out  
3 what these people have -- the OPG have come up  
4 with.

5 I live to the east of Yonge Street  
6 in downtown Toronto and it's different when people  
7 live in an area where work is -- this is their job  
8 and they've invested in a home, it's very hard for  
9 them to say that the industry that supports that,  
10 that they're going to speak against it. That's  
11 just a -- a natural.

12 If the people were told that they  
13 had other options as being replaced, I don't think  
14 that that's happening enough. I really, really  
15 don't. And I'm speaking here as a -- I didn't have  
16 to come all this way from downtown Toronto because  
17 I don't -- I don't live that close to the plant,  
18 but it's -- there are other ways.

19 And, again, the survey that I  
20 would do would not be showing -- because I know  
21 what my neighbours say and they don't live near  
22 nuclear. And do they like it? They want an  
23 alternative. That's what they what to hear, but  
24 it's -- nobody is going to speak about the  
25 alternative or tell them that it's not available.

1 Then it's just not going to -- they're going to  
2 say, oh, okay.

3 CHAIRPERSON GRAHAM: Thank you  
4 very much for your observation.

5 The process now, is we go to the  
6 floor and I'll go to OPG. Do you have any  
7 questions to the intervenor?

8 MR. SWEETNAM: Albert Sweetnam,  
9 for the record.

10 We have no questions, but I have  
11 two comments based on issues that were raised by  
12 the intervenor. One of the things that was raised  
13 was a comparison of emissions of -- and that the  
14 emissions should really be taken across a  
15 lifecycle.

16 We have that information. That  
17 information was submitted in the EIS. Now, I'll  
18 just put it on the record quickly.

19 For nuclear, and again this is  
20 lifecycles, CO2 emissions for nuclear, between four  
21 and 30.5 grams of CO2 per kilowatt hour. For wind,  
22 between 4.5 and 65.5 grams CO2 per kilowatt hour.  
23 Hydroelectric, between 6.5 and 25 grams CO2 per  
24 kilowatt hour. Solar, between 46.5 and 372 grams  
25 CO2 per kilowatt hour. Natural gas, between 325

1 and 560 grams CO2 per kilowatt hour. And coal fire  
2 plants, between 960 and 986 grams CO2 per kilowatt  
3 hour.

4 The other clarification I would  
5 like to give because the statement was made about  
6 passing on the cost of nuclear to the next  
7 generation is that when a decision is made to  
8 proceed with nuclear, it's based on a LUEC, which  
9 is a levelized unit electricity cost.

10 And that cost includes the actual  
11 cost of the plant, the cost of operating the plant,  
12 the cost of disposing the waste, the cost of  
13 decommissioning, the owners costs, the land cost,  
14 any transmission cost associated with that plant.  
15 That's all rolled into the LUEC and the decision is  
16 based on the LUEC.

17 And the LUEC that was provided by  
18 the Assistant Deputy Minister encompasses all of  
19 those costs, so when you see a cost stated on a  
20 LUEC basis, it's a complete cost for nuclear,  
21 including the future liabilities.

22 CHAIRPERSON GRAHAM: Thank you  
23 very much, Mr. Sweetnam.

24 CNSC, do you have any questions?

25 DR. THOMPSON: Patsy Thompson.

1 No thank you.

2 CHAIRPERSON GRAHAM: Thank you.

3 Government departments, I see

4 none.

5 Then we have two questions from  
6 the floor, and I'll close the -- close it with  
7 that. And the first one is Louis Betrand. Mr.  
8 Betrand, the floor is yours for a question, please.

9 --- QUESTIONS BY THE INTERVENORS:

10 MR. BETRAND: Yes, thank you -- is  
11 it on? Yes, thank you, Mr. Chairman. I'm new to  
12 these proceedings, and I wonder if it would be  
13 possible through you to ask a question of Ms.  
14 Pawlowski of OPG?

15 CHAIRPERSON GRAHAM: Put your  
16 question. I'll see where it should go.

17 MR. BETRAND: Fair enough.

18 CHAIRPERSON GRAHAM: To the Chair.

19 MR. BETRAND: Thank you. Louis  
20 Betrand for the record. Through the Chair, many  
21 politicians in these host communities of Pickering,  
22 Clarington, and the Regional Municipality of Durham  
23 have, on many occasions, hardly endorsed the  
24 nuclear industry. And I'm wondering if the  
25 applicant is aware of any survey that was done by

1 the municipalities that would then empower the  
2 municipal -- the elected officials to speak on  
3 behalf of that population. Thank you.

4 CHAIRPERSON GRAHAM: Thank you. I  
5 will direct that to OPG, but it was discussed the  
6 other day about polls and about polling. I think  
7 that's what your question was, and one mayor had  
8 said that he ran his election on that and got  
9 elected and that was his poll, but, OPG, would you  
10 care to respond further?

11 MR. SWEETNAM: Albert Sweetnam for  
12 the record. The politicians are empowered to speak  
13 for the people based on the elections. This is how  
14 we work in a democracy, and we just had municipal  
15 elections, so I think the politicians that have  
16 spoken at this hearing are empowered to speak for  
17 the people that elected them.

18 CHAIRPERSON GRAHAM: And OPG is  
19 not the politician.

20 MR. SWEETNAM: Albert Sweetnam for  
21 the record. We try not to be.

22 CHAIRPERSON GRAHAM: The one other  
23 question is from Karen Calvin or Colvin.

24 MS. COLVIN: Karen Colvin from  
25 FARE, Families Against Radiation Exposure, and I'd

1 like to thank Ms. Howarth for raising the issue of  
2 stress and how it may affect the nearby residents,  
3 and I'll give my own life history as an example.

4 I -- I grew up in this  
5 neighbourhood. In fact, I live -- I -- my  
6 grandparents had a farm approximately a mile east  
7 of here, and I lived there in 1975 until 1980 and  
8 made the conscious decision to leave the family  
9 farm to move away from the Darlington plant.

10 And I was never, ever questioned  
11 by anyone from OPG, and I would just wonder how  
12 many other people are in my position that have done  
13 the same thing and have just cleared out because  
14 they didn't want to raise their children within a  
15 few close kilometres of a plant that would emit  
16 dangerous radiation? Thank you.

17 CHAIRPERSON GRAHAM: Thank you for  
18 that question. I'm not sure whether OPG can  
19 respond to how many that didn't answer that had  
20 left, but if you want to try -- the question, I  
21 think, would be hard for them to answer. Do you  
22 have another question, and then we have to call it.

23 MS. COLVIN: Well, I could -- I  
24 could follow up by saying that from the time I grew  
25 up, this community is entirely altered, and I know

1 that there was some questions last week as to  
2 whether some farmers were warned from OPG that they  
3 should not use or sell their produce. You know, it  
4 used to be a rural community, you know, with  
5 farmers who took pride in taking care of their  
6 land, and now, you know, it's much altered. And I  
7 think that the Darlington plant has a lot to answer  
8 to that.

9 CHAIRPERSON GRAHAM: We've had  
10 Health Canada here last week and had questions with  
11 regard to similar questions which you're referring  
12 to. I -- I don't think there's anyone here tonight  
13 unless Dr. Thompson could respond, but I -- pardon  
14 me? OPG may want to respond. I'll go to OPG then.

15 MS. SWAMI: Laurie Swami. We have  
16 not issued any -- any warnings or suggestions to  
17 local farmers that there would be restriction on  
18 consumption of their garden products or any of the  
19 products from the local farms.

20 We have a local farmer on our  
21 property who leases our land currently. We will,  
22 as a result of this project, be requiring to  
23 terminate that lease with him for the sole purpose  
24 of using the land for the -- as we know and we've  
25 talked a lot about the site layout, we'll be using

1 that land for the purpose of -- of the soil  
2 stockpiled to the north northeast corner, so we'll  
3 be using that land.

4                   There are other farms in our area.  
5 We do sampling, as we've talked about, the  
6 radiological -- excuse me -- the Radiological  
7 Environmental Monitoring Program. We monitor  
8 product. We have that result. It's part of our  
9 dose calculations, but it's also submitted in data  
10 through the REMP reports that we've talked about  
11 extensively.

12                   And so we do have a program for  
13 monitoring produce, water, milk, honey, many, many  
14 different consumable products, and we have not had  
15 any reason to issue a restriction or a warning.

16                   If that was to take place, it  
17 would be done by the provincial government. They  
18 have the -- and we've described that in our  
19 documentation how and when that would take place  
20 through the emergency response. But, again, we've  
21 never had a reason to do that.

22                   CHAIRPERSON GRAHAM: Thank you  
23 very much. With that, I'm going to ask -- I'm  
24 going to thank you. You have -- you say you have a  
25 little question, and I'm also going to ask you to

1 leave that chart that you had with our secretariat  
2 at the back when you leave, and you can have a very  
3 small question. On the microphone and identify  
4 yourself.

5 MS. HOWARTH: That the OPG -- one  
6 of the OPG people quoted that the mayor had the  
7 approval of the citizens because they -- they voted  
8 for him and that was -- that was his poll. This is  
9 -- I think this a sign of how the public is  
10 feeling. Often it's around 50 percent that don't  
11 vote because they've lost faith in the system  
12 because they feel that they're not looking -- the  
13 politicians aren't listening to them. So that's my  
14 comment on the poll

15 CHAIRPERSON GRAHAM: I don't want  
16 to get into a philosophy of why people don't vote,  
17 so with that, thank you very much for your travel,  
18 for your coming here tonight, and safe travels back  
19 to Toronto.

20 MS. HOWARTH: Thank you.

21 CHAIRPERSON GRAHAM: With that, I  
22 guess we don't have anything else other than the  
23 fact that -- do we have something else? No. If  
24 that's the case, tomorrow at 1:30. We're  
25 adjourning. Tomorrow morning we do not sit, but

1 we'll sit tomorrow afternoon and evening. Thank  
2 you everyone for coming and participating. I now  
3 adjourn today's panel.

4 --- Upon adjourning at 9:49 p.m.

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C E R T I F I C A T I O N

I, Alain H. Bureau a certified court reporter in the Province of Ontario, hereby certify the foregoing pages to be an accurate transcription of my notes/records to the best of my skill and ability, and I so swear.

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