Canadian Nuclear Safety Commission

Commission canadienne de sûreté nucléaire

Public Hearings

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Le 19 mai 2006

Public Hearing Room
14th floor
280 Slater Street
Ottawa, Ontario

Salle d'audiences publiques
14e étage
280, rue Slater
Ottawa (Ontario)

Commission Members present

Commissaires présents

Mr. Alan R. Graham
Dr. Christopher R. Barnes
Dr. Moyra McDill
Dr. James Dosman

M. Alan R. Graham
M. Christopher R. Barnes
M^{me} Moyra McDill
M. James Dosman

General Counsel:
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Jacques Lavoie

Secretary:
Mr. Marc A. Leblanc

Secrétaire:
M. Marc A. Leblanc

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Ottawa, Ontario

--- Upon commencing on Friday, May 19, 2006

at 8:33 a.m.

THE CHAIRPERSON: Good morning everyone and welcome to the Public Hearing of the Canadian Nuclear Safety Commission.

Oh, yes, you have to do that first. I'm sorry, I'm too anxious to get to Bruce.

Go ahead, Mr. Secretary.

Opening Remarks

M. LEBLANC: Bonjour, mesdames et messieurs. Bienvenue aux audiences de la Commission canadienne de sûreté nucléaire.

The Canadian Nuclear Safety Commission will continue its public hearings. The Commission meeting is scheduled to start at 1:00 p.m. this afternoon to be followed by a closed hearing by a panel of the Commission later this afternoon as well.

Mon nom est Marc Leblanc. Je suis secrétaire de la Commission et j'aimerais aborder certains aspects touchant le déroulement de l'audience.

During today's business, we have simultaneous translation. Les appareils de traduction sont disponibles à la réception. La version française est

au poste 8 and the English version is on channel 7. If you would, please keep the pace of speech relatively slow so that the translators have a chance of keeping up.

Les audiences sont enregistrées et transcrites textuellement. Les transcriptions se font dans l'une ou l'autre des langues officielles compte tenu de la langue utilisée par le participant à l'audience publique. Les transcriptions devraient être disponibles sur le site Web de la Commission dès la semaine prochaine.

To make the transcripts as meaningful as possible, we would ask everyone to identify themselves clearly before speaking. As a courtesy to others, please silence your cell phones.

Monsieur Graham présidera cette audience publique.

Mr. Chair.

THE CHAIRPERSON: Now, I can start.

Thank you very much ladies and gentlemen and good morning. Welcome to the public hearing of the Canadian Nuclear Safety Commission. I am Alan Graham. President Keen, who is unfortunately unable to be in attendance today, has assigned me to preside over this hearing.

I would like to begin by introducing the Members of the Commission that are with us here today. On

my right are Dr. Moyra McDill and Dr. Christopher Barnes. On my left is Dr. James Dosman.

In addition to Marc Leblanc, the Secretary of the Commission, we also have Mr. Jacques Lavoie, General Counsel to the Commission, who is with us on the podium also today.

I would like to note that the Commission is still on enhanced security status, as are many of the facilities which we regulate. As such I will, as appropriate, take measures to ensure that security matters of a sensitive nature are not discussed in public and will, if necessary, move in camera at any time for discussions on security matters.

On the agenda today is a one-day hearing on the matter of Environmental Assessment Screening Report regarding the proposal for the Refurbishment for Life Extension and Continued Operations of Bruce A Reactors at the Bruce A Nuclear Generating Station.

Mr. Secretary.

M. LEBLANC: This is a one-day public hearing. The Notice of Public Hearing 2006 H06 was published on March 1, 2006. The public was invited to participate either by oral presentation or written submission. April 18th was the deadline for filing by intervenors. The Commission received 17 requests for

intervention. May 11th was the deadline for filing of supplementary information. I note that supplementary information has been filed by Bruce Power, CNSC staff as well as intervenors.

Mr. President.

THE CHAIRPERSON: I would like to start the hearing by calling on the presentation from Bruce Power, as outlined in Commission Member Document 06-H12.1, 06-H12.1A, 06-H12B.

I will turn to Mr. Duncan Hawthorne, President and Chief Executive Officer of the company to make his presentation.

Mr. Hawthorne.

Bruce Power Inc.
Environmental Assessment Screening
Report regarding the proposal for
The Refurbishment for Life Extension
and Continued Operations of Bruce A
Reactors at the Bruce A Nuclear
Generating Station

06-H12.1 / 06-H12.1A / 06-H12.1B
Oral presentation by
Bruce Power Inc.

MR. HAWTHORNE: Good morning, Mr. Chairman,

Members of the Commission. For the record, I'm Duncan Hawthorne, Chief Executive Officer of Bruce Power.

With me today, I have Andrew Johnson, who is our Executive Vice-President with responsibility for the restart project and, on my other side, Duncan Moffett who is with Golder Associates, a principal and consultant on the environmental assessment process.

Given that the CNSC staff will be presenting just after me and talking in detail about the EA itself, I have chosen to provide them my remarks and update for the benefit of the Commission on the project itself and an overview of the preparatory work that's being conducted at this time.

First, let me just briefly overview Bruce Power and who we are. Of course, we assumed the operational licence for this facility on May 11th, 2001 and so created the first private nuclear generator in Canada.

We are an all Canadian owned organization and we generate more than 20 per cent of Ontario's electricity at this time. Just for background, currently we have six operational units. As the Commission is aware, we returned to service units 3 and 4 after our significant lay-off period. Units 5 to 8 have operated throughout.

Coming now to the Bruce A restart as it's covered by this process today, units 1 and 2 were operational for a period of time, laid up at different periods, unit 2 being the first of the units at Bruce A to be laid up and came out of service in 1995. Unit 1 was laid up in 1997 at the same time as units 3 and 4.

Initially, when we considered the potential for restart of the Bruce A units, we focused our attention on units 3 and 4. The logic for doing so was that we had strong documentary evidence that units 3 and 4 had remaining life in their pressure tubes, calandria tubes and steam generators, and having successfully confirmed that that was the case we embarked on the restart.

At that time, we were aware that units 1 and 2, in order to restart, would need all those major life cycle components replaced and both for financial and for operational reasons, we chose to defer any decision on that until we had successfully restarted units 3 and 4.

Of course, Ontario continues to suffer from a shortfall of supply, and there is a rising demand for generation and, of course, nuclear being emission-free, it's certainly one of the favoured options. In order to progress that, we conducted our own feasibility study to flesh out the scope of the refurbishment to better understand, as well as the major components, what other

activities would need to be undertaken. That feasibility study led to an agreement to make a $4.25 billion commitment to the Bruce A facility. We reached an agreement with the Ontario Power Authority and so embarked upon the project. And of course the project is detailed further.

In terms of energy challenge, you know, not to dwell on it, it's clear that there is a problem in Ontario. One of the advantages of a restart of nuclear units is, of course, the ability to progress on a timetable that would be unachievable with new build. So as I say, our logic has been to consider on the basis that we can restart these units on a timely and efficient manner and so bring short-term relief to the Ontario marketplace.

The next graph gives an indication of the supply gap. It's a pretty stark outlook for Ontario when you consider that nuclear is 50 per cent of the market contribution at this time, and absent refurbishments, all of the nuclear generation would exit life around 2018. This project at Bruce 1 and 2 is intended to at least give these two units a lifetime reaching to 2035 and beyond as a consequence of the life cycle components being replaced.

Additionally, within the agreement, we have talked about a number of other things. So if you look at

the Bruce A restart project, as it's covered in the EAA and as it's contemplated, we see this EA process as being a planning tool to think for the future as well as deal with the immediate issue of the restart of 1 and 2. Not to dwell on the financial numbers but the intention here is to restart Bruce 1 and 2. We estimate the cost of that to be $2.75 billion. Unit 3, which is currently operational, has an estimated end of life around 2009 and so we have an agreement in principle that we would conduct the same refurbishment activities on unit 3. Unit 4 steam generators; when we restarted unit 4, we understood that there was limited operational life in the steam generators less than the pressure tubes were capable of delivering and so we provisioned for the possibility that we would replace the steam generators only on unit 4.

All of this is actually the scope of our EA project.

In terms of understanding what the cornerstones are to be successful in this project, we have always understood the importance of obtaining a social licence to do this work. All of the activities at Bruce Power since we took over the control of the site have been to inform the public, explain what we do in our day-to-day operation, have a very close liaison with our municipalities and provide very good access to

information. In doing so, it was our belief that we could expect support.

Of course, we have to deal with our own environmental compliances and ongoing licensee and with our six operational units.

The important thing for us in this project common with all large projects is to be sure that we understand the scope. We spent 18 to 24 months defining the scope of the project. Of course, we had the benefit of doing a number of these activities in order to restart units 3 and 4, but there are obviously more complexities to 1 and 2 because of the major component replacement. In order to do that, we have engaged in some very detailed contracts with -- I would call them the great and the good of the contracting community; you know, the specialists in those areas have been assigned contract work.

One of the obvious difficulties and things to be considered very closely in this project is that we do have two operational reactors, units 3 and 4, right next door to the two that we intend to refurbish. So an important element of the project is to create as much segregation as possible between our operational units and units 1 and 2, which are undergoing overhaul.

So we will speak in a moment about the construction island concept. And of course another key

thing to this project and, indeed, for the industry as a whole is actually replenishing the human resources necessary to not only conduct the project itself but to operate these facilities in the long term.

We have understood as a company that one of the key things here is that contractor work and contractor activity, particularly the level of work here, represents a higher industrial safety risk. As a consequence of that we have taken great care in making sure that the contractors understand the arrangements of work.

Additionally, we have made sure that we have a good way of bringing contractors onto our site, that we orientate them appropriately. I have personally written to them all an individual letter setting out expectations and standards and reminding them that in our history -- you know, we have a very strong industrial safety record, but typically when we have had severe accidents and, indeed, fatalities it has been during construction activity and for that reason, I want people to be particularly alert to the risk of this project.

We also want to have continuity. There are as I say a number of contractors but the thing that ensures continuity for us is comprehensive quality assurance programs and, indeed, having independence in our project controls.

We have formed a health and safety committee specific to the project, and I hold quarterly meetings with the Chief Executive Officers of all of the contracting agencies.

Turning now to the matter of human resources, we've spoken often in front of the Commission about the challenge the industry faces in terms of staffing itself for the future. We have, since 2001, hired 243 new operators, 239 maintenance staff, 79 engineer scientists and 357 other. So you can see a situation since 2001 where we've had close to 1,000 new staff. That gives us a chance to lower the age profile but, of course, coming with that is a significant training challenge and indeed the need to ensure that we keep the knowledge.

As part of our project for restart, the human resources requirements will be we do of course obviously have to have qualified staff for these new units when they return to service so as part of our restart project is indeed to train a whole new family of authorized staff. In order to accommodate this, we have actually purchased an additional full scope simulator, which we will use for the dedicated intent of training our operation staff. And of course, we are gearing up maintenance staff, et cetera, and engineering staff to

support an eight-unit operation.

In terms of just a brief overview of the project, I know the Commission would be aware of the intent here but the major elements of the project are that we intend to replace all of the fuel channels and calandria tubes, steam generator replacements. Feeder pipes in the area where industry experience and inspection would indicate that there is a potential for life-limiting effects. We also intend to do a full refurbishment of the tugboat generators and a balance of plant work would be the things that we did on Units 3 and 4; fire protection upgrades, EQ and a variety of other maintenance activities.

One of the key issues, of course, in a project of this nature is managing our waste stream. Of course, Bruce Power is relying on a contractual interaction between ourselves and Ontario Power Generation. Ontario Power Generation, as the Commission would be aware of, have submitted plans for a new intermediate level waste facility. That plan has received EA approval and, indeed, a licence to build. They are able to accommodate our waste and arrangements. However, this is our longer term plan to establish all the waste storage capability for the full life of our site.

We, of course, as part of our scope

assessment have done a very accurate assessment of the waste volumes given that they are major components, such as steam generators and pressure chips.

One of the things that this project benefits from is the experience we have had on Units 3 and 4, not only in terms of the project itself but the EA activity has benefited from the EA follow-up activities that were carried out as a consequence of the restart of 3 and 4. So we believe that we have a more complete and supported-by-data collection experience on this.

As I say, we have recognized that there are, as in all projects, opportunities to learn and improve and we believe that the Unit 1 and 2 project will benefit from our experience on Units 3 and 4.

Recognizing there is some sense of urgency to see these units returned to service, we have taken some steps to prepare for the project. We understand that's our own commercial risk. However, we have begun to segregate the operational units from the construction area by the erection of barriers. This photograph, you can see, is actually a barrier arrangement that separates Units 3-4 from Units 1-2. It closes all levels in the facility. We intend to create an entirely separate entrance into the construction island so that we don't compromise the operational behaviours of the site.

Where there are operational items within the construction island, these are clearly marked and they are barriered off so that only trained Bruce Power operational staff would access those features.

As I say, much of this is preparatory in that we have to, obviously, accommodate something like 1,500 construction staff. So we have to deal with offices and facilities and washrooms and all the normal things you would expect from a large construction project.

Turning to the issue of openness and transparency, of course, we have had experience now having conducted a number of EAs to ensure that we get a comprehensive consultation with all interested parties. I believe the staff will comment on this but, however, on our part we are speaking for Bruce Power.

We recognize the importance of this project to Ontario. We recognize the interest in this project universally. So as part of our initial plan, we launched and communicated heavily the location of our project website. It’s a website that’s updated weekly. It contains live video image. It also contains computer graphics so that we can show people what the project actually looks at. But you could visit our website and see a computer graphic of the steam generator, of the crane replacement. You can see how we intend to store and

transport. You would be able to see an animation how we intend to remove pressure chips and calandras, et cetera.

Of course, we have had a number of open houses. We have held a number of “Come and See” programs. We provide a quarterly update to the community which indicates the status of the plant as well as the status of this project. We participate in joint liaison committees with our local council and community leaders. We also participate in what’s called an Impact Advisory Committee so that we can plan the accommodation of the staff, the medical arrangements and give the community a chance to do some forward planning around our activities on the site.

We have held a number of stakeholder tools around our visitor centre.

Of course, one of the issues for us is our relationship with our First Nation neighbours that we have. We continue to work very constructively with them, as we did do in the EA follow-up program. But we have continued to have a working relationship beyond that and, of course, it’s important for our own employees who represent a significant part of the community in their own right, understand the project.

As I say, I could page through these website points but I really just wanted to make the point that the website is very comprehensive. It talks about

the EA project milestones. We tell them when and we in fact are here today in front of the Commission. It gives them an update on what activities are being carried out in any given week and what are planned for the short term.

In conclusion, Commissioners, I'd like to say that we believe we have conducted all that was required that was in the EA. We, of course, have tried to deal with the immediate issue of the restart of 1 and 2, but also to take some forward-planning steps such as the potential to refurbish Unit 3, the steam generator replacement on Unit 4 and, indeed, the potential to use LVRF fuel on Bruce A as part of an ongoing improvement.

Of course, the Commissioners are aware that the intention is to proceed with LVRF fuel on Bruce B but, of course, were that to be a successful project, then this will be of consideration for Bruce A. So in order to accommodate for that eventuality, we have also included it in our EA process today.

Thank you very much for your attention.

THE CHAIRPERSON: Prior to opening the floor for questions, I would like now to move to the presentation from CNSC staff, as outlined in CMD 06-H12. 06-H12.A, 06-H12.B. I will turn to Mr. Grant, Director General, Directorate of Power Reactor Regulation.

Mr. Grant, the floor is yours.

06-H12 / 06-H12.A / 06-H12.B

Oral Presentation by

CNSC Staff

MR. GRANT: Thank you, Mr. Chair.

For the record, my name is Ian Grant, Director General for the Directorate of Power Reactor Regulation and I am accompanied today by Dr. Patsy Thompson, on my left, Acting Director General for the Directorate of Nuclear Cycle and Facilities Regulation; Mr. Guy Riverin, the EA Specialist for this project; and seated behind me, Mr. Phil Webster, the Director of the Bruce Regulatory Program Division, and the other members of the EA review team.

We are here today to present the screening report on the Environmental Assessment of the proposed Bruce A Refurbishment for Life Extension and Continued Operations Project.

In October 2004, Bruce Power sent the CNSC a letter of intent indicating that it may apply to return Units 1 and 2 of the Bruce A Nuclear Generating Station to operational status for an extended period through the end of a potential Bruce Power lease extension to 2043.

Bruce Power also indicated that it may consider the refurbishment of Units 3 and 4 at a later

date with a view to extending their operational life through 2043 and that Bruce Power may seek authorization at a future date to use Low Void Reactivity Fuel, otherwise known as new fuel, in the Bruce A reactors and to operate them at maximum rated power.

The Canadian Environmental Assessment Act requires that before the Commission can make a decision on any such licence application, that it must be satisfied that the project will not likely cause significant environmental effects. And to this end, CNSC staff made a determination that a screening type federal environmental assessment was required.

Environmental assessment guidelines, which describe the basis for performing EA and focus the assessment on relevant issues and concerns, were prepared by CNSC staff and approved by the Commission in July 2005. These guidelines provided specific direction to Bruce Power on how to document the technical environment assessment study which had been delegated to them by CNSC staff, pursuant to section 17.1 of the CEAA. In addition, the Guidelines provide a means of communicating the CNSC environmental assessment process to stakeholders.

CNSC staff and experts from other federal and provincial agencies reviewed and commented upon Bruce Power's draft EA study report. The draft was revised and

finalized, taking into account comments received from the expert review. A final EA study report was subsequently used by CNSC staff to prepare a draft screening report. This report was issued for five-week public review and comment period from January 6 until February 10th of this year.

During the public review and comment period, CNSC staff held a public information session on the draft EA screening report in the town of Kincardine and the final screening report which is being considered today was then prepared.

So now, Mr. Guy Riverin, Environmental Assessment Specialist with the Environmental Assessment and Protection Division will describe the following in some detail: the screening process that was followed; the environmental assessment results, public and government consultation; key issues and concerns identified; and CNSC staff's conclusions and recommendations.

Maintenant je vais laisser la parole à Monsieur Riverin.

M. RIVERIN: Merci, Monsieur Grant. Bonjour, Monsieur Graham, madame et messieurs les commissaires. Mon nom est Guy Riverin, spécialiste en évaluation environnementale, Division de la protection et de l'évaluation environnementale.

This slide outlines the various steps undertaken by staff to fulfil the requirements of the Canadian *Environmental Assessment Act*. These steps are described in more detail in CMD 06-H12. This extensive process lasted 17 months from the date of determination that an environmental assessment was required in December 2004 to today's hearing. Many opportunities were provided for input from the public, First Nations and stakeholders by Bruce Power, CNSC staff and the Commission through its hearing process.

All public, First Nations and stakeholders' comments received by CNSC staff were reviewed, considered and addressed. These can be found in Appendices 4 and 5 of the Screening Report annexed to the CMD.

The EA Guidelines approved by the Commission identified the scope of the project considered in the assessment. The scope of the assessment included all factors required for screening environmental assessments included in paragraphs 16(1)(a) to 16(1)(d) of the Canadian *Environmental Assessment Act*, plus some of the discretionary factors included in paragraph 16(1)(e) such as purpose of the project, need for and requirements of a follow-up program and the likely effects of the project on renewable and non-renewable resources.

The Environmental Assessment Guidelines

also describe the methodology used in preparing the Environmental Assessment Study Report and the Screening Report, including requirements for public and stakeholder consultation program.

This project includes the following aspects: refurbishing nuclear and non-nuclear systems; refuelling and restarting Units 1 and 2 at Bruce A and the operation of those units for up to 30 additional years; potentially refurbishing Units 3 and 4; and potentially using new fuel that is Low Void Reactivity Fuel in all four Bruce A reactors.

The Bruce A Refurbishment Project will produce radioactive wastes that will be managed at the Western Waste Management Facility. This project's environmental assessment considers the production and handling of these wastes on the Bruce A sites, as well as the transportation of waste to the WWMF. The long term management of waste was considered by Ontario Power Generation in their environmental assessment for the Refurbishment Waste Storage Project. Staff presented its screening report on this proposal to a panel of the Commission at a hearing held on February 15, 2006. A Commission decision was made public on March 2006.

The bounding scenario for the Environmental Assessment in front of you today are as follows: the

refurbishment phase for which the majority of activities will occur between 2005 and 2012, and the operations phase which include operation at full power with new fuel and was considered to take place between 2008 and 2043.

The assessment also considered refurbishment, normal operations, and the effects of malfunctions and accidents for each assessment scenario described previously.

The assessment of the direct effects of the project on the environment described in section 9.1 of the screening report was carried out in a step-wise manner as follows: identifying potential interactions between the project and the environment; initial screening; examining potential interactions to identify likely changes as a second screening; assessing the effects using valued ecosystem components; identifying mitigation measures that could eliminate, reduce or control measurable adverse effects where feasible; determining adverse residual effects remaining after mitigation; and, finally, where likely adverse residual effects remain, assessing their significance.

The assessment also considered cumulative effects, effects of the environment on the project and effects of the project on sustainability of renewable and non-renewable resources. This methodology is consistent

with standard practices used for environment assessment around the world and with guidance provided by the Canadian Environmental Assessment Agency.

The EA Screening Report contains information on subjects prescribed in the Environmental Assessment Guidelines issued by the Commission in July 2005, including background information about the project, a description of the project, a description of the existing environment, the results of the environmental assessment technical studies, recommendation on mitigation measures, recommendations regarding the follow-up program, and CNSC staff conclusions on the result of the environmental assessment.

The initial screening examined 17 projects, works and activities, excluding malfunctions and accidents, to identify those that could possibly interact with or affect each of the environmental components identified. This screening identified 177 interactions with the environment; 78 for the refurbishment phase and 99 for the operation phase.

One bounding waste transfer accident during the refurbishment was advanced for further assessment, as were one conventional accident and one nuclear accident for the operation phase.

Using criteria such as regulatory standards

and guidelines, existing conditions and the experience of technical specialists, each of the 177 interactions were assessed to determine which of these resulted in a likely measurable change on the environment. One hundred and nine (109) of the 177 interactions were identified as likely measurable effects; 54 for the refurbishment phase and 55 for the operation phase. These 109 interactions were advanced for detailed assessment.

All malfunction and accident scenarios presented were advanced for assessment. Each of these 109 likely measurable effects was considered to identify possible means of mitigation that would eliminate, reduce or control the effect. This further assessment resulted in the identification of 17 likely residual adverse effects of the project on the environment, excluding malfunctions and accidents, that were advanced for assessment of significance.

One conventional accident and one nuclear accident identified for operation phase were advanced for assessment of significance.

Of the 17 likely residual adverse effects, excluding malfunctions and accidents, assessed for significance, eight were for the refurbishment phase and nine for the operation phase. An additional three residual adverse effects were associated with malfunctions

and accidents. These were effect of radiation exposure to members of the public as a result of airborne release from a severe nuclear accident, effect of radiation exposure to terrestrial biota as a result of airborne releases from a severe nuclear accident and effect of tritium concentration in drinking water due to an accidental release of moderator-heavy water during the operations phase.

Magnitude, extent, duration, frequency and permanence of the effects were criteria used in determining the significance of these residual effects. The conclusion of the environmental assessment using these criteria was none of these 20 residual effects were significant.

The environmental assessment also considered cumulative effects, which are incremental effects of the project when added to or combined with the effects caused by other projects or activities at the site as well as offsite. Twenty-three (23) projects that could possibly overlap with the Bruce A refurbishment project were included in the assessment of cumulative effects. Particular attention was given to cumulative effects of radiation doses to members of the public and nuclear energy workers.

The environmental assessment concludes that

there is no likely adverse cumulative effects caused by the project as the incremental dose to the public and nuclear workers was found to be well below CNSC's regulatory limit.

The assessment covered the effects of the environment on the project, as well as the effects of the project on renewable and non-renewable resources. In both cases, the EA concluded that it is unlikely that there would be significant adverse effects.

Overall the assessment concluded there were no significant adverse effects likely to be caused by the project during refurbishment under normal operations, or under malfunctions and accidents.

A follow-up program is required to determine if the environmental effects and cumulative effects are as predicted in the environmental assessment and to confirm whether the mitigation measures identified are effective and thus determine if any additional mitigation strategies are required. The plan identified 23 activities for the follow-up program.

These are related to radiation and radioactivity, surface water resources, the aquatic environment, the atmospheric environment, geology and hydrogeology, the terrestrial environment and the socioeconomic conditions.

If the conclusions of this environmental assessment are accepted by the Commission, the details of a follow-up program would be developed by Bruce Power in consultation with CNSC staff and other interested parties such as federal and provincial agencies, First Nation and local community groups. The plan would then be integrated into the CNSC licensing and compliance program, to be presented to the Commission at a future hearing if the Commission accepts the recommendations regarding this environment assessment, and should Bruce Power apply for license amendments to pursue proposed project activities.

For the Bruce A refurbishment environmental assessment the following public consultation steps were taken. A public registry was established which includes all correspondence and documentation related to the environmental assessment. Bruce Power held three rounds of open houses in all parts of the regional study area, from January 2005 to December 2005. It distributed three newsletters to approximately 40,000 households in the project area at different intervals. It held meetings with more than 243 members of the public and members of stakeholders groups including both First Nations located in the regional study area.

Information about the environmental assessment was available on both Bruce Power and CNSC

websites. CNSC consulted First Nations and other identified stakeholders on the environmental assessment guidelines in the screening report. A draft screening report and notices inviting public comments were mailed directly to 91 stakeholders both within and outside of the project area. Information about the environmental assessment including the environmental assessment study report and draft screening report were placed in nine libraries in the project area. During the public comment period on the draft screening report, CNSC staff held an open house in the project area.

The objective of this session was to provide clarification on the purpose and contents of the draft screening report and its role in the environmental assessment process with the aim of assisting the public in preparation of comments on the report. A technical review of the draft environmental assessment study report was also conducted by CNSC experts and federal and provincial authorities experts.

A total of nine submissions were received by staff from the public and various stakeholders concerning the draft screening report. Copies of the submission are found in Appendix 5 of the screening report, while responses to the issues raised in these submissions are found in Appendix 4 of the report.

Issues such as discussion of the state of the Ontario power grid and alternative methods of electricity generation are outside the scope of assessment defined in the Environmental Assessment Guidelines issued by the Commission in July 2005.

The purpose of the environmental assessment is to determine whether the proposed project is likely to cause significant adverse environmental effects. The acceptability of this project will be judged on the basis of its environmental effects and safety in accordance with the requirement of the *Canadian Environmental Assessment Act and* the *Nuclear Safety and Control Act*.

Regarding requests for a comprehensive study, there are no provisions in the *Canadian Environmental Assessment Act* for bumping an environmental assessment from a screening assessment to a comprehensive study assessment. Only projects listed on the comprehensive study list regulations can be subjected to a comprehensive study.

Further, CNSC staff is satisfied that public concerns expressed to date have been addressed in the screening -– environmental assessment and hence staff is of the opinion that this proposal does not warrant a referral to the Minister of the Environment for review by an independent panel or mediator.

The regional study boundaries were defined in the Environmental Assessment Guidelines and were expanded where necessary during the assessment. No likely adverse environmental effects were identified beyond the boundaries identified in this screening report.

Some stakeholders raised the considerations of acts of terrorism and sabotage in the assessment. After reviewing the current security requirements including additional measures required by the CNSC following events of September 11, 2001, CNSC staff concluded that security issues are being appropriately managed by the ongoing regulatory process, and further, that they do not warrant special consideration in the environmental assessment.

Security is also reviewed by the CNSC for all licensing decisions and the CNSC will not amend a license unless it is satisfied that the Applicant will make adequate provisions for the maintenance of security.

Questions were raised regarding the management of radioactive waste. As previously mentioned, the management of low and intermediate level radioactive waste is undertaken at the western waste management facility and is a responsibility of Ontario Power Generation.

A detailed description of the management of

these wastes is provided in the recently completed environmental assessment entitled “Western Waste Management Facility Refurbishment Waste Storage Project”, which was the subject of a decision issued by the Commission on March 2nd, 2006. The long-term management of radioactive waste including irradiated nuclear fuel is being developed through separate federal legislation. Although the Nuclear Waste Management Organization has made recommendation to the federal government through the Minister of Natural Resources, no final options or sites have been defined or approved as yet.

Consequently, it would be inappropriate to undertake a discussion of these options in this assessment.

A question regarding preparatory -– travail préparatoire –- for the project being undertaken by Bruce Power, officials at Bruce Power have assured staff that the activities being conducted at this time are preparatory in nature such as planning and mobilization activities relating to the proposed refurbishment.

CNSC staff has sought confirmation from Bruce Power that they will not perform any physical work which could be seen as being within the scope of the project as defined in the Environmental Assessment Guidelines for the project. Preparatory work -– I’m sorry

I have my French tongue in the back -– undertaken in advance of the completion of the EA process, this carried out at financial risk to Bruce Power. Such activities do not and should not affect the defuelled guaranteed shutdown state of the units and are in compliance with the conditions of the Bruce-A operating licence. As a result of its public consultation of the draft screening report, CNSC staff did not identify any new issues that warranted modification to the conclusions reached in the report.

On the basis of its review of the EA study report and comments received from technical reviewers and the public on the draft screening report, CNSC staff concludes that taking into account identified mitigation measure the project is not likely to cause significant adverse effects on the environment.

CNSC staff also concludes that the EA has identified the likelihood and significance of the adverse effects with reasonable certainty. Furthermore, CNSC staff concludes that public concerns expressed to date about the project do not warrant referring the project to the Minister of the Environment for review by a mediator or panel.

CNSC staff recommends that the Commission accept the conclusion of the screening report; that is, that the project, taking into account the appropriate

mitigation measures, will not cause significant adverse environmental effects.

CNSC staff also recommends that the Commission accept the conclusion that public concerns expressed about the project have been addressed in the assessment and do not warrant referring the project to the Minister of the Environment for review by a mediator or panel.

CNSC staff further recommends that the Commission determine a course of action consistent with paragraph 21(1)(a) of the *Canadian Environmental Assessment Act*; that is, following the licence amendment applications related to this project by Bruce Power to proceed with assessment of the licence application under the *Nuclear Safety and Control Act*.

Ceci complète ma partie de la présentation et je demanderais à Monsieur Grant de conclure au nom du personnel de la CCSN.

Merci.

MR. GRANT: Thank you, Mr. Riverin, for your presentation and, Mr. Chair, staff are now ready for -- to respond to any questions posed by the Commission.

THE CHAIRPERSON: Thank you, Mr. Grant.

I will now open the floor for questions from Commission members to both CNCS staff and to Bruce

Power officials. Open the floor to Dr. Dosman who will start.

MEMBER DOSMAN: Thank you, Mr. Chair.

Well, thank you both for your presentations which were quite concise which is quite in contrast to the extent of the report which is voluminous and which really presents a challenge in trying to sort out the critical elements involved.

I'm going to ask several specific questions and then several general questions and the first questions relate to the new fuel and, if you like, the downstream effects of using new fuel. It seems to me that the use of the new fuel will have several effects, as I see it, on waste management but also the effects on enhanced productivity and potential effects on the environment.

I take it that from the report that the -- in its completion the plant -- the units will be able to go from operation at approximately 92.5 percent to almost 100 per cent and I would like to ask CNSC staff if they have considered the effects of the warming on the lake and the effects on the whitefish of enhanced thermal load and enhanced thermal plume of this enhanced activity, because it's obvious that, in its full expression, there will be a thermal load on the lake that is considerably greater than has ever been experienced in the past.

If the new fuel is used ultimately in all the units -- and I realize this environmental assessment relates to the refurbishment -- there will be an enhanced effect on the thermal plume and I would like to ask CNSC staff to comment on their views as to the importance of this effect and specifically on the whitefish and other VECs. So that's my first question.

MR. GRANT: Thank you, Dr. Dosman.

I will pass the question to Dr. Steve Mihok. I'll preface his answer with the remark that you're perfectly correct that the units at Bruce-A have operated for some period of time at approximately -- at power levels below the maximum rated part that was part of the original design. This is to address the safety issues that have been identified by the licensee and by CNSC staff and the purpose of new fuel is to address these issues and to enable the units to operate at high power in conformance with limits, appropriate limits and conditions.

As to the question as to whether the increased thermal output has been considered in the environmental assessment, I will now turn it over to Mr. Mihok -- Dr. Mihok.

DR. MIHOK: Steve Mihok for the record. I'm a Scientist with the Environmental Assessment and

Protection Division.

Essentially the global answer to your question is that in the technical studies supporting the screening report there is a great deal of detail in terms of modelling thermal plumes and temperature effects and that modelling addresses specific sensitive locations in the environment.

The modelling is also supported by recent information that we have, the first information that has been gathered in conjunction with this process on actual temperatures at the bottom of the lake and so on, much better data than were available a few years ago when the previous environmental assessment was done for units 1 and 2. So we now know in the real world that temperature differences from the Bruce-A plume are on the order of about 1 degree Centigrade with two units operating at critical habitats such as Lawson Bank for Lake Whitefish.

And the modelling predicts that the increased temperature from operation of more units, again with a new fuel and so on, will not be significantly impinging on any of the benchmarks that we have where we expect to see effects on whitefish, which is the main criterion in the environment that is of worry.

There are other issues dealing with fish in the summertime and so on, such as bass and the area of the

discharged channel and so on, but in general the global picture for the environment and particularly for fish including Lake Whitefish has been assessed in great detail and is satisfactory in terms of not producing significant adverse effects.

THE CHAIRPERSON: Dr. Dosman, do you have any ---

DR. MIHOK: Thank you. If I can maybe just add one comment on Patsy Thompson's advice here.

The issues that remain with, let's say, a little bit of residual uncertainty are in the follow-up program, and, in particular, issues dealing with Lake Whitefish are going to be part of what is actually ongoing right now as a result of the previous follow-up program. Bruce Power is engaged with various stakeholders, particularly the First Nations, in quite detailed studies that border on research as opposed to more normal monitoring activities to look at some of these issues.

We're satisfied that the issues are being addressed very well and I think the stakeholders in general are also satisfied. The process involved has been very participatory and therefore everyone is involved essentially as equal partners seeing the results and understanding the implications of what is being done and following things essentially in real time and great

detail.

MEMBER DOSMAN: Perhaps we could have some additional comments on the follow-up program. It was indicated that the follow-up program has yet to be developed and I was wondering if CNSC staff would be able to perhaps develop -- give a little more detail on plans for the follow-up program.

MR. GRANT: Thank you. Ian Grant for the record. I'll call on Dr. Patsy Thompson to describe planning for the follow-up.

MS. THOMPSON: Patsy Thompson for the record.

You will see in the screening report on Chapter 10 that provides the details to the follow-up program at this stage. Table 10.1 includes details of the elements that will be included in the follow-up program. The intention, if this project proceeds to licensing, is that each of the element -- so it's on page 90 of the screening report, Table 10.1. There are elements of aquatic biota that speak to these issues and the intention is, if this project proceeds to licensing, that the details of the methodology would be developed and, as was done in the past, this is handled through the Licensing and Compliance Program.

There is also a new requirement to report

the results of the follow-up program to the Canadian Environmental Assessment Agency in a registry so that people can benefit from the experience of environmental assessments to be able to improve assessments. And so this is the process that will be followed.

DR. DOSMAN: Thank you. I'm just wondering whether you could address the issues specifically of monitoring hydrazine and morpholine in the site study area in the context of the follow-up.

MS. THOMPSON: Patsy Thompson for the record.

Hydrazine and morpholine have been identified as probably the non-radiological substances that are released to the environment as those that have the greatest potential to cause concern. The intention is for Bruce Power to monitor both chemicals during certain situations to ensure that the concentrations don't exceed those that have been predicted and are expected under normal operations. They will then be compared to the toxicity benchmarks that were assessed -- that were used during the assessment.

DR. DOSMAN: Is it fair to assume that because the plant will be operating at an extent that will be greater than ever experienced in the past, even in its full expression presumably in the early '90s and so on,

that the concentrations of hydrazine and morpholine will be also correspondingly increased in the discharges?

MS. THOMPSON: Patsy Thompson for the record.

My understanding of the use of morpholine and hydrazine in plant operation is that it is not related to the power rating or the operation of the reactor but is used to control the chemistry, and so we don't anticipate that the concentrations will increase proportionately with the increase in the power rating.

THE CHAIRPERSON: Bruce Power might like to comment.

DR. DOSMAN: Yes, could we ask Bruce Power to comment on that issue?

MR. MOFFETT: Duncan Moffett for the record.

As CSNC staff has said, in estimating the concentrations of hydrazine and morpholine in water, for example, the releases, we have the historical record of eight units operating at the site and in doing our environmental assessment we use that information to predict what it will be like going forward in terms of eight units.

We're confident, given the increasing levels of control with improved equipment, with improved

management processes, that our environmental assessment has overestimated the likely releases in future and we have identified in the follow-up work -- we've recommended in the follow-up some work related to actual monitoring to improve the level of certainty on the concentrations in water and air, for example.

MEMBER DOSMAN: Thank you. I'm just wondering if I might come back and ask the same questions about tritium releases and I might start with CNSC staff.

MR. GRANT: Dr. Dosman, I'll call upon Dr. Mihok to respond to your question about tritium.

DR. MIHOK: Steve Mihok for the record. I'm an Environmental Risk Assessment Specialist with the CNSC.

Essentially the operation of the reactors at Bruce has always produced very low levels of tritium in the environment and this has been monitored very effectively for many years and compared to the public dose limit of 1 millisievert from pathways analysis-type of modelling. The overall picture of tritium releases has been on the order of about one per cent of DRLs derived release limits or one per cent of the public dose limit of 1 millisievert. In the course of assessing the impacts on human health from different pathways from water, from air and so on, from tritium releases with the proposal that's

on the table now, really, the situation is not going to change dramatically. We are expecting roughly the same operational conditions as in the past, nothing really in the documentation that would raise any major level of concern.

MEMBER DOSMAN: Have the issue of releases and the possible effects on the biota, particularly the fish, been discussed with the First Nations groups and what were the results of those discussions?

THE CHAIRPERSON: Sir, Bruce Power, you're asking?

MEMBER DOSMAN: It's to staff, but I also would like to hear from Bruce Power.

THE CHAIRPERSON: Okay.

MR. RIVERIN: Guy Riverin, For the record.

First Nations, have been provided the information and have also been sent letters by CNSC staff asking them to comment on the document and even offering to meet with them and discuss the content of these reports. There was, at least to CNSC staff, there was no responses provided. I am aware that Bruce Power has had meetings with First Nations.

MEMBER DOSMAN: May we hear from Bruce Power about consultations, First Nations particularly, on the issue of the whitefish?

MR. HAWTHORNE: For the record, Duncan Hawthorne. We have it all the way through this. We have a very active consultation and communication with our First Nations neighbours. Of course, tritium doesn't have -- you know, the levels we are talking about doesn't have effect on biota at all. You know, so there is zero effect in this regard.

In terms of all of these parameters, there's been -- as was mentioned previously, there's been a very healthy and continuous ongoing dialogue with First Nations, particularly in the area of whitefish. The Commission members would remember our first restart of Units 3 and 4. We did have some concern raised by First Nations in terms of the consideration of whitefish as a varied ecosystem and was it considered adequate. You know, we've responded to that as part of the follow-up program and Commission members might remember that that resulted in a positive letter from the First Nations. So we took that as an indication of NEET, and so since that time, we have had a very active and ongoing dialogue and indeed working relationship with them. So all of the information that's been collected has been shared openly with them.

MEMBER DOSMAN: Thank you.

Mr. Chair, I'll pass on to other members.

THE CHAIRPERSON: Dr. McDill?

MEMBER McDILL: Thank you. I have two areas of questioning; one on feeders and one on new fuel.

With respect to the feeder replacements and representative nuclear accidents chosen for environmental assessment, perhaps staff could remind me where the failure of multiple feeders would be positioned in the representative nuclear accidents chosen for environmental assessment.

MR. WEBSTER: Phil Webster, for the record. I'm director of the Bruce Regulatory Program.

Theory of multiple feeders is not considered -- it's not regarded as credible for a single feeder failure to cascade and influence the feeders around it. So within the set or design base --it's accidents that have historically been considered -- we've only looked at single feeder failures.

MEMBER McDILL: In this rebuild though, there will be large numbers of feeders cut and repaired; is that not correct?

MR. WEBSTER: Phil Webster, for the record.

Yes, that is correct. Every feeder will have the inner portion replaced on every reactor.

MEMBER McDILL: So there will be on the order of thousands of welds; will there not?

MR. WEBSTER: Yes. That's correct. I can't figure the number of thousands off the top of my head, but approximately 8,000, I would think.

MEMBER McDILL: Yes, I didn't go to hundreds of thousands. I thought I'd stick at thousands.

And each weld will be non-destructively tested after welding? Maybe I could ask Bruce.

MR. HAWTHORNE: Duncan Hawthorne.

Of course, this is an important part of the refurbishment. Feeders have been identified as an area that warrant replacement. We see this as a critical part of the work. You're absolutely correct. There's an area of work that has to have a high QA around it, not only in terms of the material choice but also in terms of the integrity of the weld. So part of the program is indeed to conduct an examination of the quality of the welds on completion. That would be a standard practice, frankly.

MEMBER McDILL: It's the thousands of them all sitting so close together that, I think, present the challenge. But the positioning has been answered. That was my first question.

Thank you.

So my second area can be found in Appendix 2 in C.10, with respect to new fuel -- sorry, C1.10, "Engineered and Administratively Controlled Limits and

Requirements”. Again, I noticed there was a difference and I was wondering if CNSC staff could explain how many new fuel bundles -- it gets a little complicated -- that the maximum number of LVRF bundles for which an upper sub-criticality limit would not be exceeded.

So what was the number? We’ll start with that, I guess.

MR. WEBSTER: Could I clarify? Are you speaking of criticality outside of the core?

MEMBER McDILL: It’s in -- it starts with C1.9.1, “Normal Conditions” and then there’s a “Bounding Abnormal Accident Condition” on page C.11. It’s a bit of a problem with the ---

MR. WEBSTER: I would like to call upon one of my colleagues, if he’s present in the room, Dr. Parvaiz Akhtar, the Director of the Fuel and Physics Division or one of his staff.

MR. KHOTYLEV: For the record, my name is Vladimir Khotylev. I represent Physics and Fuel Division.

Yes, Bruce Power has estimated -- they have had to estimate all abnormal, credible abnormal conditions for operation of fissure materials outside of the core. This is standard requirements from applicable and national nuclear standards. So by doing that they had to address some issues; one of them is to establish appropriate sub-

critical margins and; second, to maintain that margin for all credible abnormal conditions and normal conditions outside of the core.

So that's what they exactly did for using design, existing design of Low Void Reactivity bundles which are going to be used if approved by the Commission in Bruce B. So this is a margin to prevent nuclear criticality accidents and usually apply it everywhere in the world. It does mean that violation of the margin will automatically lead to accident. It is measure of prevention of accident. So when they estimated number of bundles which will keep out of core activity and criticality within established bundles -- within established margin -- there are very established administrative controls and engineering controls which would keep any configuration credible or under credible abnormal conditions in such a status that violation of the criticality margin is not credible.

We are not talking about criticality accidents here.

MEMBER McDILL: Then, perhaps it would be useful if you would explain the -- sort of the separation of the engineer controls and the administrative controls. I maybe could ask Bruce to do that.

MR. HAWTHORNE: Duncan Hawthorne.

I have to apologize. We've been trying to find a document, so I didn't hear your question. Could you repeat it, please?

MEMBER McDILL: Thank you.

Could you just, from your perspective, separate the engineer controls and the administrative controls? I'm leading to a question of training, so I'm trying to put those together.

MR. HAWTHORNE: So I found an equation, Commissioner. It's with respect to transportation of fuel bundles and how many we are allowed to administratively have stored together. You know, we talk about 24. Typically, you know CANDU plants are probably one of the few in the world where you don't have to manage fuel movements and that way it would be normal practice in nuclear energy to have administrative procedures such as when you're moving the fuel in elevators or forklifts or various equipment, then you're only allowed to move a certain number at any time. So these administrative procedures would be procedures that would govern operator fuel movements, arrangements that ensure that storage, separation, transport, et cetera would be delivered in such a way as to ensure that we don't have too much of the fuel in the same location or at the same risk, subject to a common mode failure. Engineer controls is more, for me,

about packaging, the physical bodies that would mitigate against damage occurring.

So you're absolutely right. There is a training element to that, that there has to be a procedure for operators, to make them aware of the changed arrangements, if you like, with respect to handling and storage of LVRF fuel as opposed to natural uranium fuel.

MEMBER McDILL: And when and how will that be -- I realize that this is the environmental assessment, not the licensing, so it becomes a bit muddy, but where will that be introduced?

MR. HAWTHORNE: I think you may have answered that question yourself. It clearly is a licensing matter. We have to demonstrate that we do indeed have the appropriate arrangements for handling and storage of LVRF fuel as part of the overall arrangements for the introduction of it into our facility.

MEMBER McDILL: I guess it would be appropriate to ask staff to comment.

MR. GRANT: Thank you.

I will ask Mr. Webster to detail it, but I would make the observation that as part of routine licensing, staff will assess Bruce Power's, sort of the licensee's procedures and programs, and criticality control will be part of that assessment.

Mr. Webster, would you like to add detail to what I've just said.

MR. WEBSTER: Thank you. Phil Webster for the record.

The containers, within which the initial two channels worth of new fuel will be delivered to the site and handled within the site, are acceptable for any criticality concerns that may exist, as the Commission will hear this afternoon in the hearing then. That is only for the first two channels worth.

For the full core load which will start in a year or so from now, a different kind of container will be provided and the adequacy of that will be put to the Commission when staff and Bruce Power return once again to request permission to load the full core load into probably one of the Bruce B units.

THE CHAIRPERSON: In the context of today's hearing, are you getting the information you need, Dr. McDill?

MEMBER McDILL: Yes. Thank you. That's sufficient for round one.

THE CHAIRPERSON: Before I go to Dr. Barnes, I think we'll take a five or ten minute break. We've been going quite steadily and then we'll go to start off -- finish round one with Dr. Barnes at 9:55. Thank

you.

--- Upon recessing the proceedings at 09:46 a.m.

--- Upon resuming the proceedings at 09:57 a.m.

THE CHAIRPERSON: We had indicated before the break we are still on round one, and I will now go to Dr. Barnes.

MEMBER BARNES: Some of my questions will be a little bit of a follow-up to those already asked.

One does have a sense of déja vu with these studies and so I would like to ask, following up on the questions on whitefish and First Nations interactions, the time we had those discussions a couple of years ago, one of the resolutions was to involve the University of Guelph scientists in really trying to have a more quantified assessment of the impact of contaminants, I guess on the whitefish, which is a primary food source for First Nations living somewhat to the north. But I'm not sure that I saw, unless it was just a reference in here, any of the outcomes of that University of Guelph research.

Can anyone be a little bit more specific whether that has actually matured into new data that is part of these studies?

MR. GRANT: Ian Grant for the record, Dr. Barnes.

I'll call on Dr. Thompson to respond.

DR. THOMPSON: Patsy Thompson, for the record.

Dr. Barnes, when the Commission issued its record of decision on the environmental assessment for the restart of Units 3 and 4, the Commission had directed staff to involve the First Nations and other stakeholders in the development of the follow-up program. Staff initiated this process and Steve Mihok, an Environmental Risk Assessment Specialist from the Commission, essentially chaired that process and will be able to provide details of the work that was done.

As an added note, the CNSC staff are satisfied with the work that was done for the follow-up program for Units 3 and 4 on the whitefish issues and have accepted the conclusions of the reports, and the issue for Bruce Units 3 and 4 follow-up program were accepted by the Commission and closed about a year ago, and I think it was May 2005.

I will ask Dr. Mihok to provide some of the details that you've asked for.

MR. MIHOK: Yes, Steve Mihok for the record.

I can give you quite a bit of detail because I was personally involved for several years in what happened. So I'll try to keep it brief.

Essentially, a technical working group was formed, which I chaired. It involved many stakeholders, Ministry of Natural Resources, Ontario Fisheries Association, Chippewas of Nawash, Saugeen Ojibway, Saguingue Métis. Literally, everyone who was interested was invited. Those who were serious participated. Everyone was involved in a very detailed scientific process for several years. Some groups, particularly the First Nations, were actually involved in the field. They were part of the process of doing the sampling and so on.

The University of Guelph, particularly Dr. Crawford, had a very active role at the beginning. His role diminished as time went on.

The net outcome of the project was a quite large report. Again, it was a report that was required because of the licence condition and so on, but when the report was issued it was discussed in detail at a meeting of virtually all of the stakeholders in May of 2005.

The report was accepted by us and also accepted by the stakeholders. It was posted by Bruce Power on the web. So it was also publicly available. I think it may still actually be on the web. I'm not sure, you know, as of the last month or two whether it is still there on their website and so on. But essentially it was a very open and transparent process and ended

satisfactory, ended officially on our part as far as the licence condition is concerned as well with the acceptance of the results and confirmation of the previous conclusions from the previous EA.

What continues now is also a participatory process but it is one that is essentially between Bruce Power and the stakeholders that remain interested in, again, more research issues. Some of the residual scientific issues from that work are related to sampling, for example, differences between using gill nets and trap nets, ways of sampling larval emergence rather than for example, measuring temperature at the sub-straight as a way of looking at actual affects.

So a number of activities are continuing. They've involved a recent meeting with the University of Guelph and the fisheries biologist of the Chippewas of Nawash at Guelph, which we did not attend. But again, the parties involved have been talking to each other. They've been actually doing the work in the field setting out some of these larval traps and these nets and so on. Bruce Power has been very, very cooperative. It has been an excellent process, in my opinion, overall.

What will continue will be activities along those lines and more a research program then anything else probably for perhaps even as much as five or ten years

there will be sampling with trap nets in particular in November as part of this international research study on the population structure of Lake Whitefish and Lake Huron. There will presently be some larval work as well on Loscombe Bank to make more sense of the biology of that particular area. Environment Canada is also involved in some of the planning and so on in this project.

So there are an awful lot of things that are going on. They are entirely satisfactory, from our point of view, and they are essentially just being monitored by us at the moment. Every year Bruce Power will produce a public summary of what has been done, posted on the web. Interested stakeholders will be personally notified. And if there is any need to pursue these things in more detail in the future, everyone knows everyone and they have direct access to myself at the CNSC, someone with a history on this issue, and we will take appropriate action if necessary.

THE CHAIRPERSON: Thanks.

Would you say that your summary there was adequately documented in these reports, or is it just that I missed it?

DR. THOMPSON: Patsy Thompson, for the record.

Dr. Barnes, the Screening Report, the

Environmental Assessment Study Report and the Screening Report were drafted using some of the information from the follow-up program. So the relevant information was included in the EA Study Report and in the Screening Report, but we have not presented a separate report to the Commission on the results of the follow up program.

Could I also add, to complete what Dr. Mihok has mentioned, is that Bruce Power continues to keep staff informed with the planned work and the results of the work they're continuing to do. The intervention in CMD 06-H12.7 is an intervention from participants of the First Nations on this program where they indicate there is satisfaction with the program.

THE CHAIRPERSON: Maybe I should make a general statement to my comments or questions, whether you relate to that, and I sort of made it a bit before because this is obviously a very large site, and as Bruce Power, I think, has mentioned, partly in response to one of Dr. Dosman's comments.

If you look historically, once upon a time there were eight units operating and then it went down to four, and then it's gone to six, and now it's going back up to eight. Obviously, this very large amount of paper that we see before us today is an attempt to assure the public that there are no significant environmental affects

through this process, all right, and we are just taking a little freeze frame at the moment, and then there are follow-up programs, again, to help document this.

But in a sense, this whole process of going from eight -- to four to six to eight -- does provide an opportunity to test and to show incremental affects, all right? If we have sufficient baseline, if we have baseline going back before eight units came on stream, but then there was a period when all eight were operating for quite some time and then the number was shutdown, and then it got up to six quite recently and now we're going to add to eight.

So in all honesty, what I don't see in here in this is a kind of some graphs or charts that eventually would -- or an outline of a follow-up program that would have that as a prime objective to really show cumulative affects in such a way that you could show over a period of time whether they were effects and so on in a somewhat quantified manner. It's as though we get down buried into many, many of these very specific components, 177, et cetera, et cetera, without sort of standing back and maybe looking at a larger model.

Is that a fair comment, Dr. Thompson, perhaps?

DR. THOMPSON: Patsy Thompson for the

record.

It is a fair comment. The thermal impacts were traditionally regulated by the Ontario Ministry of the Environment. At the time that the stations were built and began operation it required a permit from the Ontario Ministry of the Environment. Under that permit there was a condition that OPG had to document station impacts on fish populations. There was an extensive amount of work done to look at, essentially before the stations were put in operation, estimate what fish could be affected, where and in what manner. Then, the fisheries biologist that worked for OPG at the time, with consultation from experts in the Great Lakes, designed a very detailed program to assess impacts of fish -- impacts of the stations on fish.

This work resulted in an extensive document that was submitted to the Ontario Ministry of the Environment, I think around 1996 but we can confirm that, and that was based on all units, all eight units being operational. We have used the -- and Bruce Power, in developing the Environmental Assessment Study Reports, have done -- have used the large amount of work that was done previously by OPG in documenting the Environmental Assessment Study Report. So we do have a baseline for the eight units being operational.

What the CNSC has not done, or CNSC staff

has not done, is presented that information to the Commission during licence renewals but it's possible to synthesis that information and provide it to the Commission. A vehicle could be either an annual report or a mid-term report on Bruce.

THE CHAIRPERSON: Let me pick up on a couple of points then -- and we've spent a long time with all this information. But if I read one part of the document it says, in terms of climate change, that there's not going to have much of an effect. Then, on a second one you'd say, well, thermal effects of bringing on the two additional units will increase, I think, it's by one degree C or something like this, quite modest, and therefore it really is not going to have any effect for the most part on whitefish. And there's some data given on the sort of temperature range of reproductive cycles and so in the two types of whitefish.

But this is a plan that's going to operate, as Bruce Power has indicated, at 2043, during which we do expect to see some significant climate change in that part of the world. We do expect to see.

Mr. Grant is querying that. So if you would disagree I would like to hear what the data is if there's not going to be any significant climate change in terms of lake waters and therefore the cumulative effect

of the additional thermal effect on what is likely to be increased lake temperatures on the whitefish.

So when I look to see what the type of follow-up program is, to be able to document that; again, I really don't see the detail in there. There's usually some general words saying there will be a bit of a follow-up program, and I'll come to some specific ones later on.

So my question -- that's a little rambling perhaps, so just let me phrase it: Do you really think that the monitory programs, follow-up programs, are over the timeframe that we're looking at here, up to 2043, are going to be sufficient to establish whether the additional thermal loading that we get through the addition of these additional units is going to have an effect on whitefish when combined with the possibility of climate change?

DR. THOMPSON: Patsy Thompson for the record.

In terms of your concerns about the details of the follow-up program, specifically to address thermal impacts on the two species of fish that are of most interest, CNSC staff can, in preparation for the licensing hearing if this goes to licensing, provide those details to the Commission before the Commission is requested to make a decision.

In terms of the modelling for the climate

change, staff relies on Environment Canada as the expert federal authority to provide input to CNSC staff on the adequacy of the assessment done by -- that was delegated to Bruce Power specifically for those issues. Environment Canada has not indicated that the assessment was deficient in any manner and the tools that were used for the assessment are tools that are currently available.

THE CHAIRPERSON: Could I ask -- again, it goes back to earlier licensing discussions on the Bruce area but I just pick up on one here and that's under the Aquatic Biota in Table 10.1. It's monitoring the fishing pressure and to quote “discharged channel boat counts”.

It is my impression when we had this before that there was -- it was thought appropriate to discourage fishing in those channels. Maybe Bruce Power?

MR. HAWTHORNE: Duncan Hawthorne.

Yes, I can certainly comment on that. Obviously, one of the key parameters for us discouraging fishing in that area is security. It's really a licensing matter more than an environmental one. But you're absolutely correct, Dr. Barnes, we have indeed sought to restrict the proximity of fishing vessels near our intakes but it's primarily for security. It's not an environmental issue.

MEMBER BARNES: Without going into the

security, have you been reasonably successful in discouraging fishing in those areas? I'm just saying because that Table 10.1 seemed to indicate that had not been achieved.

MR. HAWTHORNE: Well, I believe we have been successful in limiting the approach to the area, obviously, and the area close to the site is a popular fishing spot. We have had a lot of interaction with the local fishing community. We have indeed limited access at close proximity to our site and we've done that, as I say, in response to CSNC's request for improved security to that sort of a risk, but yes, we have indeed limited access.

MEMBER BARNES: I'll just keep on the biological side for just a minute and I wanted to ask, we're dealing here with somewhat of the outgoing water and the ingoing water into the plant and has there been any advancement made -- Zebra mussels are mentioned within the document. Has there been any -- and there's been ongoing research elsewhere. In fact, there was a news report I think in the last week of some new advances in the U.S. of getting rid of Zebra mussels.

Has this problem been resolved at all? It relates to the potential chemicals used to have a solution and therefore to potential lake effects.

MR. HAWTHORNE: Dr. Barnes ---

THE CHAIRPERSON: Perhaps Bruce Power might like to comment.

MEMBER BARNES: Yes.

MR. HAWTHORNE: I'm not just quite sure I understood what the question was. We certainly we dose our service water system. We have the ability to do chlorination as appropriate. You know, we believe we have adequate arrangements to deal with the requirement. We don’t have the same -- I'm aware that other nuclear facilities have suffered significantly because of, one, their intake design and depth, and secondly, you know, the climate that exists within them. We don’t have the same level of activity, title activity, or indeed the design of our structure is different, but at the same time, we do have -- as I say, we do dose our service water and we have the ability to apply higher levels of chlorination should that be necessary.

THE CHAIRPERSON: I think what Dr. Barnes was asking maybe is the effects of the use of chlorination and so and the increased use. Is it, Dr. Barnes, what you're really trying to find out?

MEMBER BARNES: Well, what I was trying to find out was because of different kinds of research in this area, there have been changes in -- I'm not sure

about this particular plant -- in trying to control Zebra mussels and I didn’t know if Bruce had adopted any different techniques, chemical techniques for controlling this, and therefore, if it would have a different impact on lake waters?

MR. HAWTHORNE: There’s really two things to say; one would be that we haven't adopted any material change to our instruments. Secondly, we have an approval requirement in terms of dosing requirements that we have to stay within the parameters of our approval certificate and the certificate, of course, sets thresholds that are designed to be below a threshold that would actually create any adverse effect on the environment around us.

MEMBER BARNES: Let me go to ground water issues and could I just ask two points in establishing the restarts of 1 and 2 in addition to 3 and 4. I realize some of these questions are more appropriate perhaps for the licensing period, I don’t have that data, but it’s somewhat transitional into these.

Will there be additional groundwater monitoring to properly evaluate ground water effects? To Bruce.

MR. HAWTHORNE: Of course, we do have groundwater monitoring facilities. We do have a monitoring program that will continue as an ongoing

exercise. I should point out and maybe as an expansion on the previous answer in terms of the use of the EA program or the follow-up program and how that has played into what we see as the follow-up program going forward, we have indeed completed the EA program activities. As was mentioned in our earlier commentary, we believe that that practical data collection has given us a bit of baseline assessment for going forward for Level 1 and 2 EA. So where it has been appropriate to introduce the learnings from the EA follow-up program, then they are actually -- they form a new baseline for the going forward assessment on 1 and 2.

But yes, we do have monitoring wells. We are capable of doing groundwater monitoring from five locations and we continue to do that as an ongoing regulatory requirement.

MEMBER BARNES: In some of the documentation here dealing with a statement that deal with the paving, there was likely to be a decreased groundwater recharge and in a letter that came from one of the reviewers in the geological survey of Canada Northern Division, Sam Alpay -- this is in Appendix 3 of the Screening Report. It's entitled “EA Review Bruce A Refurbishment of Life Extension”, et cetera, August 2005. It doesn’t really have a page number, I'm sorry, that I

can refer you to but it's in the comments from Natural Resources Canada and dated, I think, October 24.

And under bold heading 2, Decrease Groundwater Recharge, there is wording that indicates as follows:

> “ESS agrees that paving the surface will cause decrease in groundwater recharge. Comparing its magnitude to that of seasonal variations is irrelevant.”

And then going on further in that paragraph, section 2.4.5 of the GHSSTD,

> “‘Professional judgment’ was cited as an evaluation criteria for groundwater recharge and flow. This is inadequate. What the proponents need to do is assess the scale and effects and support their arguments with quantitative data or reasonable estimates. Additionally, there is no mention of the type of waste that will be stored and whether or not waste handling or containment methods could pose a risk to groundwater, also in section...”

-- et cetera, et cetera.

> “The lack of relevant and quantitative supporting information makes it impossible to assess the impact of site preparation for refurbishment on groundwater recharge. The proponent is requested to provide more information based on conclusions on quantitative evidence.”

So again, giving the volume of paper, could you -- perhaps to staff if you're with me on this particular document, what was the follow up to these comments from Natural Resources Canada in terms of this groundwater issue?

Again, I may have missed -- you may have responded to that and it may have been captured in the many tables. I mention this because Dr. Thompson indicated that they depend on Environment Canada on a previous issue and here I assume you're depending on the geological survey of Canada to have some external commentary on groundwater issues and they seem to be quite critical of some of the assumptions here or lack of data.

MR. GRANT: Dr. Barnes, we're just consulting the reference.

MR. RIVERIN: Guy Riverin for the record.

An answer to that comment from NRCan was provided in Appendix 2, page 98 of 108, which response was validated by NRCan afterwards and have not disagreed or NRCan considered the answer satisfactory.

MEMBER BARNES: Okay. On some of the tables, quite a number of tables, for example Table 9.9 on page 78 of the main report, under “Reasonably Foreseeable Projects”, number 22 is listed as a deep geological repository, essentially the one on site that Bruce Power has -- I won't say necessarily proposed but it's mused that the site itself may become a location for subsurface geological disposal of site. Mr. Hawthorne, ---

MR. HAWTHORNE: Just for clarity, the DGR facilities, Ontario Power Generation, that isn’t Bruce Power.

MEMBER BARNES: I’m sorry. You were shaking your head, not OPG.

(LAUGHTER/RIRE)

MEMBER BARNES: I’ll put the question to staff then in terms of this document. It might be -- a reader might be led to believe that this is a reasonably foreseeable project. Is that fair to list that particular project which seems to me to need to go through a good deal of proposal and evaluation as a reasonable foreseeable project?

DR. THOMPSON: Patsy Thompson for the record.

I'll provide initial comments and if it's needed, Mr. Riverin will provide additional information.

OPG has provided a letter of intent to the CNSC. An environmental assessment has been initiated for this project. A comprehensive study is under way and public consultations are planned on the guidelines, the scope of assessment and scope of project for the deep geological repository proposed by OPG on the Western Waste Management or the Bruce Power site. For that reason, the project was included in the assessment of cumulative environmental effects because it is a project that has been identified.

MEMBER BARNES: I would like to come up to the -- switch now and go to the follow-up program. You have a table there, Table 10.0, 10.1, preliminary elements of the project follow-up program. Dr. Dosman asked questions on hydrazine and if I look under the atmospheric environment that's on page 92 and running on page 93 of that table, Table 10.1, under "Air Quality", you have one section that deals with hydrazine, another with particulate monitoring, another with NOX. And on the latter two of those, it indicates a suggested duration and frequency of monitoring is for a duration of three months.

That's in the third or whatever it is, next to the right-hand margin, not the extreme right-hand column but the second in.

Could I ask why the monitoring is just for that period of three months during the most active period of refurbishment and why it's deemed not necessary to have that longer?

(SHORT PAUSE/COURTE PAUSE)

MR. GRANT: Dr. Barnes, Ian Grant for the record.

I'd like to invite Bruce Power to comment on the proposed monitoring program but, before I do, I'd also make the observation that these -- what you have in the document are proposed elements, preliminary elements of our proposed monitoring program that, as Dr. Thompson said, if this does go to licensing, would be fleshed out in much more detail and it would be assessed by staff and proposed to the Commission for acceptance. So as you say, there is an interface between these two things, but it may not be appropriate to get into -- to regard these as being fixed at this point. But if you -- with your permission, I'd like to refer the question to Bruce Power and ask for their observations on the proposals.

MR. HAWTHORNE: Duncan Hawthorne for Bruce Power.

If I can explain, the logic for the three-month period is obviously we have a lot of activity ongoing on the site. We will have diesel equipment, cranes, heavy equipment in the area so it was felt that that was -- three months would be -- during the most intensive period would be the sort of bounding effect on -- in particulate and air quality. And so the intent here is to say we do our monitoring for a three-month period. It's a statistically valid period at the highest level of activity and we do that in such a way as to confirm the assumptions we have made. Were it to be the case that during our data collection we found our results were diverging from that, then of course the program would have a continuation in that regard. But this was felt on our part to be statistically valid as a duration and in a period where our own assessment would be that the potential for particulate would be increased.

MEMBER BARNES: Well, this -- to be honest, what I find difficulty in trying to evaluate these documents, building on Mr. Grant's comments that, "Don't worry about it now because you can look at it again when it comes to the licensing process". On the other hand, today we're supposed to be looking at the EA document, and the EA document includes as -- in fact, just go back to the first line of environmental -- atmospheric environment

air quality, it deals with a Hydrozine issue, right; so the third-column description:

> “...develop increased certainty in estimate of Hydrozine emissions to the atmosphere”.

Okay. This has been raised as one of the concerns. We’re told that this is not a problem.

And yet, when I see the duration of this monitoring, in that case it’s actually prior to restart of Units 1 and 2. So we’re looking here at the impact of Units 1 and 2, Hydrozine is raised, and we’re going to analyze this prior to units -- prior to the restart doesn’t tell me whether it’s going to continue through that process and, therefore, how would I -- it doesn’t tell me very much about exactly what’s being measured over what duration and how I compare it to previous data and future data. This is within a so-called follow-up program. And in the last column, it says it confirms the assumptions in the EA. So how can this confirm assumptions? I mean, when I look at this, to confirm an assumption means that you should have an environmental monitoring program with a sufficient intensity over a sufficient period of time and in such a way that you can correlate that Hydrozine data with other data on Hydrozine that you have with other units here.

And despite the comments from Bruce Power, my same concerns are -- I am not persuaded by the answer that that's a critical -- like a dusty period and therefore we'll only measure it for the three months in that period for the particulate monitoring on the NO_x.

Maybe I could just -- yes, sorry?

DR. MOFFETT: It's Duncan Moffett, for the record.

We at Golder were responsible for developing this recommended follow-up program. I've got to emphasize that there are three goals in any of these -- one of three goals in any of these follow-up items. One is to determine if the assumptions we have made in the Environmental Assessment which took place over 17 month, to determine if those assumptions were correct. In some cases we need some extra time to reduce uncertainty. Although the effect may be okay, there is some residual uncertainty with respect to the data so we need to collect more information to firm up our model, for example.

And the Hydrozine fits in that category. We used historical information to predict what the effect of Hydrozine would be. We find that there is no significant effect as a result of the Hydrozine releases. However, we were concerned that there is a reasonable level of uncertainty in that prediction, so we suggested

some additional work over a longer timeframe to firm up the data used in the model. And the particulate and the nitrogen oxides follow up modelling where a second consequence of a follow-up program is to determine if your actual predictions are correct.

In Ontario, the Ontario Ministry of the Environment specifies acceptable levels of NO_x and particulate matter at a point of impingement, and they specify the dispersion model that must be used to predict those concentrations. That dispersion modelling is known to be conservative to overestimate the dust from road traffic and from non-stationery sources.

So we have carried out the Environmental Assessment. In the Environmental Assessment we find we are at or close to the criteria. We, however, believe there are -- those predictions are conservative. We say, "Do monitoring at the highest three-month period for NO_x and particulate". If that confirms that in fact the modelling was indeed conservative, those measurements over three months confirm that, then that confirms the assumption or the prediction in the Environmental Assessment that there's no adverse effect. If we find that our prediction was correct or it underestimated, we have identified four mitigation measures that could be put in place; sweeping the roads; scheduling of the use of

equipment; scheduling the times at which people drive cars and come onsite and more -- using equipment at less power rating.

So I think that's the point.

And then the last point for a follow-up program is to determine if a mitigation measure is adequate. For example, in the thermal -- in the aquatic -- in the fishery issues, we predict there is no effect because of impingement or entrainment of whitefish. We are saying continue to monitor the levels of impingement and entrainment; once the plants come back to confirm that the mitigations, et cetera, that those are correct.

MEMBER BARNES: So if I come back to this table and follow up on your comments on particulate monitoring and NO_x monitoring, you're saying that the province has certain requirements; you have a model; you think that there is not a problem, but there may be a problem, right? There could be an impact and you will measure this and if you find that there is any problem, that will help you adjust the mitigation processes, right?

DR. MOFFETT: Dr. Moffett.

That's essentially correct.

MEMBER BARNES: Right.

So if there was to be a problem, it would likely occur during the times of the most active period of

refurbishment activities; correct?

DR. MOFFETT: Correct.

MEMBER BARNES: So what are you doing? You're monitoring during the most active period of refurbishment. You're going to have three months of monitoring during the time at which this is potentially the most impact. So you're going to know at the end of the period of most impact you've got a problem, after the problem.

DR. MOFFETT: That isn't -- that isn't entirely correct. The type of monitoring we're doing provides pretty close to real time data. For example, the nitrogen oxide monitor we have in place is capable of telling us what the nitrogen oxide concentration is in real time as it's happening. If we find that our prediction is incorrect -- and incidentally, all our experience says that our predictions are correct and we have over-estimated because of the model that we have to use, if that is correct we then can implement immediately the mitigation measures. For example, if we find the dust fall is greater than we expect, we can immediately implement a road washing program.

So that we can take action in response to the monitoring program.

MEMBER BARNES: So to staff, again, is

there sufficient -- because I don't personally know and I'm not sure it's in here -- we're looking at the follow-up program, so there may already be programs in place to provide, if you like, current or what I call more background information on particulate and NO_x monitoring for this site, the one we're looking at here today, but here I'm looking at information on monitoring during the critical three months.

Do you feel that this is the appropriate way to address a potential environmental and health hazard? Is the strategy for monitoring adequate and does the additional three months suggest that there isn't any before? I suspect there is, so is this monitoring that is being looked at in the follow-up sufficiently linked to, I'll say, existing monitoring for particulate and NO_x, that one, in fact, would properly see the potential hazard in the way that Mr. Moffett has just described?

DR. THOMPSON: Patsy Thompson, for the record.

The elements of the follow-up program that have been listed in Table 10.1 were taken from the different parts of the assessment. In the case of the particulate matter and the nitrogen oxide compounds the normal operation of the Bruce Power stations is that those substances are emitted to the environment in variable

concentrations and during very short periods. The major source of those contaminants are the standby generators and usually we get emissions when the standby generators are tested. So there are very few hours of operations of those standby generators every year.

So the baseline concentrations are very low. The program is intended to ensure that there will be no effects on human health and the environment during the critical period that a lot of equipment will be on site.

Having said that, we take note of your comments in terms of the difficulty in the manner that the screening report is documented right now to understand the elements and how they fit into the assessment. So we take note of your comment and we will attempt in the next screening reports to do a better job with the follow-up section of the screening report.

An additional comment is that the details of that program will be -- essentially, Bruce Power will be requested to provide the design, the methodology, et cetera, of their program before the approvals are issued to conduct those activities, and staff will review them. And the processes -- the program has to be accepted before the activities are conducted. So there is an additional mechanism to provide that, but we do take note of your comments.

MEMBER BARNES: And there would be sufficient CNSC monitoring of these sorts of activities during that sort of “busy three-month period” at which time there would certainly be some pressures to get the job done, sufficient that CNSC would be aware whether the appropriate mitigation measures were being implemented in a timely fashion should Bruce Power recognize that there was a significant spike in the way that Mr. Moffett indicated and in real time monitoring and, therefore, Bruce Power would in fact respond appropriately in the way that CNSC staff would expect them to.

But you would have sufficient staff to be able to monitor that and also have access to the sort of data that we’re talking about here.

MR. GRANT: Dr. Barnes, Ian Grant for the record.

In general terms, staff’s approach to the refurbishment project, as outlined in the guide that was mentioned in yesterday’s hearing, consists of assessing the work that the licensee is doing and confirming the adequacy of the programs both for the scope of work and for the conduct of that work and the regulatory activity plans that are being drawn up under Mr. Webster’s leadership include enhanced compliance work to verify that the licensee is carrying out the proposed activities

safely. And so the Environmental Monitoring Program would be an element of that compliance program.

I'll ask Dr. Thompson to add detail to the approach.

DR. THOMPSON: Patsy Thompson, for the record.

In terms of environmental protection, when activities conducted by the licensee for projects such as refurbishment or construction of new waste facilities, the elements of the follow-up program are generally linked to an environmental protection plan developed for a specific activity where there is a requirement to take measures, additional mitigation measures or corrective measures, in response to values or levels that would trigger action. And those levels and triggers are based on the results of the assessment.

So we would be informed and -- but essentially the environmental protection measures do not rely on staff being informed and responding, but put the obligation on the licensee to have an environmental protection plan accepted by staff that would deal with those situations as they arise.

MR. GRANT: Thank you, Mr. Chair.

THE CHAIRPERSON: Mr. Hawthorne, I think you wanted to make a comment?

MR. HAWTHORNE: I know there is a lot of information here, but I wanted to try and point you to a specific section which I think might help you with this.

If you go to the report at pages 66 and 67, there are tables within there which indicate our assessment and actually expand on the activity.

If I can just, you know, simply stated, we take an inventory of all of the equipment that may be on site, such as standby generators, forklift trucks, et cetera, multi-wheeled vehicles, and we have tabulated that on Table 6.5, the top of page 66, if you are with me there.

To expand on Dr. Moffett's comments, the real issue for us is that in evaluating the effect of this, the reason he states that our assumptions are conservative is that we, in our calculations, assume for example that the forklift truck will be operating 100 per cent of the time, that 100 per cent of the workers will be on site all of the time. These are binding conditions.

As we say in the narrative on this piece, we say that we will monitor Nox emissions, as an example, during that period continuously. We are doing so on the basis that we believe that we have bounded in a very conservative way but, nonetheless, we acknowledge in that we will monitor -- and we do have mitigation shortages

should we see ourselves on the wrong side of that.

We also note that we will notify CNSC should we find that we are out with our variations.

But, as I say, we are talking here specifically about mobile portable equipment that would be on site. We have listed the equipment as power rating, its emission assessment and we have bounded it by assuming that all of the equipment runs 100 per cent of the time and all of the people are there all the time.

So I think you'll agree with me that is a pretty conservative bounding case. I would be very happy if I could have everyone work 100 per cent of the time, but that is a bounding case. But, nonetheless, we will be monitoring continuously. And it is absolutely our responsibility to respond to the indications on a real time manner.

THE CHAIRPERSON: Thank you, Mr. Hawthorne.

I have two questions. The first one -- and not to get into a licensing process or anything else -- but when the Western Waste Management screening came before us a couple of months ago, I guess, there seemed to be a gap I believe with regard to the transport of waste or construction waste, or any other type of waste from the Bruce facility to the Waste Management facility.

I'm wondering, is this covered -- this

transportation up to the boundaries or up to the Western Waste Management facility, is this covered in this Screening Report? Has this been covered from this side -- and my question is to Bruce officials.

MR. HAWTHORNE: Duncan Hawthorne.

Yes, as was mentioned in the CNSC staff presentation, we did include transfer of materials. In fact, one of the assessing bounding cases was a drop during transfer. So, yes, there is indeed consideration in NSCA on transportation between the Bruce facility and the Western Waste facility.

THE CHAIRPERSON: CNSC staff, that gap that was identified back in the other Screening Report that only dealt with Western Waste Management on site, that now has all been covered and I know it was in your presentation. You made reference to it but that is covering all the aspects of transportation of waste, not just -- all types of waste, whether it be radiated or not, that’s all covered now?

MR. GRANT: Mr. Graham, Ian Grant, for the record.

I will call on Mr. Riverin to respond to the question.

MR. RIVERIN: Guy Riverin, for the record.

All waste managed by Bruce Power destined

to the Western Waste Management facilities are covered in this environmental EA, that is waste managed on site and transported to the Western Waste Management facility.

MEMBER GRAHAM: And all the aspects, whether it be the type of transportation, the training of contract employees to cover the safety aspects, all of that is covered within that scope, is it?

MR. RIVERIN: Yes.

THE CHAIRPERSON: Thank you.

I have one other question and that is with regard to -- and I beg your indulgence with regard to this.

In November 7th, 2005, DFO wrote Canadian Nuclear Safety Commission with regard to -- and they are talking with regard to deepwater sculpin and the follow-up program that needs to be done.

Could you brief the Commission here this morning as to what is the status of that request of their letter of November the 7th?

DR. THOMPSON: Patsy Thomspon, for the record.

The letter from the Department of Fisheries and Oceans was taken into account by staff and is carried forward in the environmental follow-up program.

You can see on page 91 of Table 10.1 where

deepwater sculpin is included. The status of that species is scheduled for reassessment in 2006 and if the status changes to one of an endangered or threatened species, then there would be an obligation to essentially put that program in place for monitoring entrainment for that species.

So it is captured within the follow-up program and staff is following the work of Environment Canada, the group that is responsible for the administration of that Act.

THE CHAIRPERSON: As I had said, I hadn't seen where it was captured, but it has been looked after. Okay, thank you.

We will now go to round two. Dr. Dosman, do you have any further questions with regard to round two?

MEMBER DOSMAN: Yes, thank you, Mr. Chair, I have a number of questions, starting on waste management.

On page 24, perhaps staff could assist me in the differences between potential exposures between low level waste and intermediate level waste. In the middle of that top paragraph on page 24, low level waste is defined as "having a contact radiation dose of less than 10 milliseverts at 30 centimetres", whereas at the last

sentence in that paragraph, intermediate level waste is defined as “having a contact dose rate of 2 milliseverts to get it at 150”.

But the comparisons are different. One involves a dose at 30 centimetres and the other involves a contact dose rate. So could staff explain how one would compare those two, given that the definitions appear different?

THE CHAIRPERSON: Your question is to CNSC Staff?

MEMBER DOSMAN: Yes, it is.

THE CHAIRPERSON: I think they're getting that information.

Mr. Grant?

MR. GRANT: Dr. Dosman, the question pertains to the particular units that are used to classify different categories of radioactive waste and I regret that we cannot answer specifically as staff are not in the room, but we could propose to come back after the break, unless Bruce Power themselves can offer some technical clarifications on the question you have asked.

MEMBER DOSMAN: Mr. Chair, could Bruce Power perhaps elucidate the -- it is very difficult to compare the two because the approach is different. One is a contact dose and the other is a dose at 30 centimetres.

MR. GRANT: I do agree with your observation and I will undertake to provide clarification after we have consulted with the responsible staff.

MEMBER DOSMAN: Is Bruce Power able to enlighten us on that issue?

THE CHAIRPERSON: I don’t think they are. So perhaps we can -- before we will do the round two, then we will probably recess before we get into the intervenors and you can get that information before we start the interventions.

Is that satisfactory?

MEMBER DOSMAN: Yes.

On the issue of waste management, I would like to ask Bruce Power if you have assurance from OPG that OPG is going to be able to adequately manage the volume of waste from this refurbishment. Indeed, I am not absolutely certain, if my memory serves me correctly, whether on the hearings for the Western Waste Management facility the full extent of the refurbishment was adequately projected.

MR. HAWTHORNE: For the record, Duncan Hawthorne.

Yes, we have -- as part of our feasibility and scope assessment, we had very detailed discussions with OPG about the waste volumes. Of course, there are

some large components, such as steam generators from our units, and so it was important that not only did we understand how we would transport them to the facility, but also how they would be stored once they arrived there.

So the short answer is yes, we had very detailed conversations with them, particularly for the large IOW components, which are the steam generators.

MEMBER DOSMAN: As a matter of interest, how will the -- presumably Bruce is in the fortunate position that the waste goes to OPG, but how will you or they manage these huge pieces of equipment? Do they leave them intact? Or do they try to break them up? What will they do with them?

MR. HAWTHORNE: The short answer is they will be left intact. The penetrations will be sealed. There will be a proper spill facility constructed to house them. Our arrangement with OPG is we fund the construction of the special purpose facility. They conduct all of the monitoring requirements, surveillance, et cetera, on those facilities as part of a contractual relationship between us.

MEMBER DOSMAN: Presumably, Mr. Hawthorne, they have the space in the facility to accommodate these large pieces, as well as multiple small pieces?

MR. HAWTHORNE: Yes, as I say -- two parts

-- a two-part answer to that.

They do have to build a special purpose location for the steam generators, but the site facility can accommodate it. Of course, they have asked for a -- and been given a year approval for an expansion to the facility. Some of that is in contemplation of this, this additional waste. Some of it, of course, is a consequence of their own activities, but certainly have the site infrastructure to accommodate it.

Our intent with pressure tubes and colander tubes is to cut them into small sort of credit card sizes. So there is a waste minimization plan as part of our overall project. The major components would be the steam generators and, as I say, they warrant a special purpose built facility.

THE CHAIRPERSON: Dr. Dosman, we don't want to get into the licensing of the Western Waste Management and that was covered in that Screening Report.

So if we could just -- because of the essence of time, I guess that's the question.

MEMBER DOSMAN: Well, I simply wanted to assure that the space and facility was adequate for the project to be undertaken.

On the issue of new fuel, I wonder if Bruce Power could briefly outline what are the positive elements

in the fuel, what are the additional risks, what are the issues around waste disposal, how this is likely to work, what the experimentation to date is on the use of the new fuel, how good is your stability of supply and, lastly, is there any issue on the dysprosium oxide in terms of contamination and waste?

THE CHAIRPERSON: Maybe we could start with the first question?

MR. HAWTHORNE: Duncan Hawthorne, for Bruce Power.

Yes, I can answer all 10 of those questions. They are obviously significantly related to licensing matters. We are indeed going to have a conversation about LVRF fuel in a separate discussion this afternoon.

A short order response would be the LVRF fuel provides better characteristics under a fault scenario as a consequence of having a special dysprosium element in the centre of the fuel pin. It responds better to fault scenarios and for that reason, it actually provides an improved safety margin for the operation of the reactor as a fundamental difference between the -- now, as a consequence of actually replacing a fuel pin with a dysprosium element, we actually lower the channel power level and so in order to compensate for that, we

have to increase the level of enrichment marginally. So that's really the trade-off, if you like, for having the improved safety characteristics in the fuel design.

Of course, as was mentioned by Commissioner McDill, there are different handling arrangements for it. We have to recognize the level of enrichment requires a greater attention to storage transportation requirements.

In terms of the long-term storage of fuel, the level of enrichment is so little as to not corrupt the storage handling arrangements post radiation. So we still believe we can manage the spent fuel storage in the same way as we would with the natural fuel source we have.

I think I got eight of them there. I may have missed a couple but ---

THE CHAIRPERSON: I think the basis of Dr. Dosman's question was does this screening report cover those aspects that could come up and not to get into the licensing. And maybe CNSC staff might like to comment also with regard to does this blanketly cover the concerns that could arise out of this as it relates to the environment?

MR. GRANT: Ian Grant for the record.

The use of new fuel was addressed comprehensively in the screening assessment and I will ask Mr. Guy Riverin to detail.

MR. RIVERIN: Guy Riverin.

Yes, the assessment covered the use of new fuel in all four reactors at Bruce A. An environmental assessment was done for the use of new fuel in the Bruce B reactors as well. So it's the second time that use of new fuel in Bruce reactors is being assessed.

MEMBER DOSMAN: Mr. Chair, specifically related to the environmental aspect, does the -- it's presumably in here somewhere, I may have missed it, but does the dysprosium result in any new environmental risk of any kind?

DR. THOMPSON: Patsy Thompson for the record.

When projects were put forward for the development of the low void reactivity fuel, dysprosium oxide was identified as a substance that needed to be imported into Canada for commercial use. Dysprosium oxide was not identified as an existing substance in Canada, so it was subject to the New Substances Regulations under the *Canadian Environmental Protection Act*. So before approval could be given for the import of this substance into Canada to be used in this process, the assessment that was done jointly by Environment Canada and Health Canada looked at all aspects of dysprosium oxide for its proposed use, that is inclusion mixing with the uranium, putting in

and making the pellets, making the fuel, and the assessment conclusions were that there were no risks to human health or the environment and as a result, the Minister of the Environment and the Minister of Health have approved this substance for commercial use in Canada.

MEMBER DOSMAN: Thank you Dr. Thompson.

I would like to go to the environmental aspects affecting workers, and I would just like to ask Bruce about how do you protect the workers from radiation exposure when you're doing such things as remodelling the reactor core and so on? There must be very high radiation levels in that facility and must represent, I would think, quite a challenge.

Briefly, how will you protect the workers from radiation exposures?

MR. HAWTHORNE: It's a very important part of the overall planning for the work. You're absolutely right. We are working at the reactor face. Of course, the reactor is shut down, defuelled, so we don't have the high radiation fuels associated with fuel, but nonetheless there are significant radiation issues associated with doing it.

What we sought to do in that work was, of course, automate and remotely manage as much as we can. So if you had the opportunity to visit our website and see

the computer animation of it, you would see that we actually have a remote device which actually sits on top of a fuel machine carriage, and it's capable of effectively being manipulated remotely in order to cut sections of the pressure tubes and deposit them in what is effectively a hopper. So that where possible, we automate and remotely manage as much of the work as we can.

Of course, we use the normal three requirements of any ALARA Program which is time, distance and shielding. So we can limit the time by having good training so the staff are well-understanding of the job, doing rehearsals. We have a mock-up facility where it's possible for staff to be trained, et cetera. The distance pieces really doing remotely or as remote as we can. And of course where it is appropriate to do so, we have applied shielding requirements.

So the entire project has to be managed against those ALARA principles and absolutely as a watch area for us we have made those assessments based on the levels of the radiation of the components we handle and our intention as an ongoing ALARA Project for the well being of our own staff is to -- you know, of course, they would wear personal dissymmetry so that we can get live feedback. We do task by task those assessments and then we can, from that, when we download the personal

dissymmetry they carry. That is certainly an area that we have to pay very close attention to.

MEMBER DOSMAN: CNSC staff, is CNSC staff satisfied that the plans for the environmental control will adequately protect the workers from undue radiation exposures?

MR. WEBSTER: Phil Webster for the record.

Yes, staff is satisfied. There are a number of mitigating circumstances here. For one thing, the reactors have been shut down for ten years more or less, so the level of radioactivity has decayed. For another, the fuel has been removed and also the heavy water. Normally, if one goes in a vault during an outage, the primary hazard to work is the tritium and that's removed by draining the circuits.

We also know that Bruce Power is undertaking an extensive decontamination campaign to clean up the insides of the vaults so that workers can normally approach -- can enter them without wearing special protective equipment.

That said, staff will be reviewing and monitoring Bruce Power’s training of workers the implementation of their own radiation protection program within the vaults during refurbishments.

MEMBER DOSMAN: Thank you for that

information. May I ask Bruce Power, what do you perceive as the principal non-radiologic occupational health and safety risk to workers on site, and by what means are you minimizing those?

MR. HAWTHORNE: As I mentioned in my initial remarks, this is fundamentally a construction site. There are some very large components being moved around, steam generators as a classic example of that where we have to remove the top from the building effectively and large craning. So it carries with it all of the significant conventional risks you would associate with a construction site.

There is a lot of hot work, welding, burning, cutting. So we've done a hazard assessment of all of those things. We have actually -- through our arrangements with a project manager -- we have actually taken over an old school. We've created our own dedicated training facility. We've put all of the employees through that orientation identifying to them, all of the hazards specific to that.

We have had a very high focus on supervisor briefing and training. We've created site specific training arrangements and indeed working arrangements specific to this project so that we can try and deal with that. I consider it personally to be a high-risk work

environment and, as a consequence of that we have been very active with the employees.

One of the other issues that I see as a focus for us, because we don't have a massive resource of construction labour and many of the people who we draw to this project wouldn't necessarily have worked on nuclear projects before, we have to make them aware of the new hazards inherent in that and, of course, the other thing is we want them to understand that while they may have worked under other arrangements and processes elsewhere, that there are different arrangements in play on our sites.

So it's an ongoing due diligence as far as I'm concerned. We have to set the standards when they come in. We have to do ongoing risk assessment of the activities and just keep our focus high because, as a high-risk environment and try as we might, to reduce the risk, it's there just as the nature of the work that is ongoing.

MEMBER DOSMAN: Mr. Chair, am I staying within the environmental assessment with this question, I would like to ask staff for their view on this issue with your permission.

THE CHAIRPERSON: Yes, provided it's covered within the scope and the screening of the scope of

the ---

MEMBER DOSMAN: Yes.

THE CHAIRPERSON: As long as we don't get into licensing issues, I think you're within the context.

And I think, along with what Dr. Dosman is saying, when you did the scoping, you had historic backgrounds of accidents in the initial construction starting -- dating back to 1979, I think it was, and was that taken into consideration of lost-time accidents, and I think there were even probably casualties, deaths at that time in the construction. Was that taken into consideration in the screening for this refurbishment?

I think in that context, you are in line.

MEMBER DOSMAN: I would appreciate the answer to your questions, Mr. Chair.

MR. HAWTHORNE: Duncan Hawthorne.

Absolutely it is the case that we've looked at the type of accidents and events that have occurred in the past. As I said, many of them, of the fatalities on our site happened during the construction stage. You know, just a few weeks ago, we remembered them in our day of mourning and I spoke to many of the work colleagues. So it's a very personal issue for us on the site too.

But most of the deaths and serious injuries occurred in activities that are very similar to those

which we do. You're working from heights, being crushed during the movement of heavy materials. So those dominate the fatalities that have occurred on our site so in order to ensure that we have our focus, we have been very specific to the people who are conducting those types of activities. For example, Siemens turbines who are lifting large heavy LP rotors have been given a cordoned off area so there is no free access and we can be very confident we know who is in the work vicinity. We have approved their working arrangements for site clearance during cleanage operations to ensure that there isn't anyone walking through those areas.

Similarly, our specific focus on movement of heavy components, because we recognize that historically those have been items that have been the highest risk. So as I say, we do understand the history of the site, we do understand the nature of the work and frankly when you look at serious injuries, they've tended to be building trade employees, people who are involved in construction work.

And one of the things that concerned me particularly was new employees, transient workers, who may not know the historical background. So part of my rationale for writing to them as individuals was to bring to their attention the environment that they step into.

MEMBER DOSMAN: Thank you Mr. Hawthorne.

Mr. Chair, may I ask CNSC staff if CNSC staff is confident that Bruce has made adequate provisions for the health and safety of both employed workers and contract workers on the site?

THE CHAIRPERSON: Just, I think that is a licensing. We'll get that in licensing. I just want -- I think maybe if you rephrase it, has these aspects been covered under the screening report?

MEMBER DOSMAN: Oh, yes, thanks, Mr. Chair. Have these aspects been covered in the screening report adequately?

MR. GRANT: Ian Grant, for the record.

Yes. I recall Mr. Riverin's presentation where he noted in one of his slides that operations malfunctions and accidents were separated into -- excuse me, refurbishment malfunctions and accidents were separated into two categories, one of which was conventional malfunctions and accidents that involved only non-radiological substances with no potential release for radioactivity.

So staff -- that has been assessed, and at the risk of moving into licensing but I'd also refer to the fact that under the regulations the licensee will be required to -- it is required to submit worker health and

safety policies. This is an area -- oversight of this area, is also something that is covered by the *Canada Labour Code* and is enforced by the Ontario Ministry of Labour, and I can say that Mr. Webster has already been considering discussions or entered into discussions with the Ministry of Labour to discuss how staff will oversee the occupational health and safety arrangements that are in place should this decision -- this matter proceed with a positive decision.

I will ask Mr. Webster if he wishes to add anything to what I've indicated.

MR. WEBSTER: I will attempt to, if Mr. Chair will indulge me for a moment. As the Commission members will hear next month when staff returns to present the 2005 Industry Report, Bruce Power's performance in the area of occupational health and safety has been excellent for that year. As Mr. Grant has said, we do recognize there are particular hazards associated with the construction portion as opposed to the operating portion of Bruce A and we are working with our provincial colleagues to ensure that the level of regulatory oversights of occupational health and safety is appropriate.

THE CHAIRPERSON: Thank you.

MEMBER DOSMAN: Mr. Chair, with your

permission, I would ask Bruce and then I would ask staff the same question with regard to the environmental report.

If you cut through all of the report and all of the 177 potential environmental interactions, what would Bruce say were the one or two really critical issues?

MR. HAWTHORNE: Duncan Hawthorne for the record.

There's really three parts to it, in my view. Firstly, we are replacing a lot of major components. The quality of the workmanship around that is critically important to us in terms of -- and this is more licensing -- you know, I'm just giving you a global view. We're replacing reactor and thermal components, pressure tubes, calandrias.

As Dr. McDill mentioned earlier, there's a lot of important integrity in the work that we have to do. We have to guarantee the integrity of those components. We are returning the reactors to service that have been laid up for a long time. Unit 2, as the Commission would be aware, was closed as a consequence of foreign material exclusion shortfall when a LED blanket was left onsite.

So if you ask me what keeps me up at night with respect to this, it would be control of foreign materials, how to manage the inventory so that we can be

confident that we have dealt with that.

And a third one which, you know, which probably would be my first one, is we have an excellent industrial safety record. I don't think there's anyone that rivals that. I would never consider this project as successful if we can't hold onto that record, the conduct of it.

So, you know, my particular focus with all of the staff and all of the contractors has been, I want it done safely more than I want it done. So I look at the project very much as being one which carries with it a lot of risk and we have to be very vigilant. That's my prime concern on this project. There's a lot of moving pieces. There's over 1,500 contractors and, as I say, it's a high-risk environment.

So the three things that I am focused on is the industrial safety during the conduct of the work, the quality of the work, particularly on main reactor vessel components and the recognition that this site has been laid up for a number of years and we have to recognize that during all of our restart activities.

MEMBER DOSMAN: Thank you.

May I ask the same question to staff? To CNSC staff, of the 177 projects, potential projects and environment interactions, when you cut through all of the

report, what would you identify as really one or two really critical aspects?

THE CHAIRPERSON: Without getting into licensing part.

DR. THOMPSON: Patsy Thompson for the record.

The assessment that has been carried forward for the projects proposed by Bruce Power has identified a number of interactions that you've mentioned. The assessment indicates that all of these interactions are not likely to cause significant impacts and thus meet the requirements of the *Canadian Environmental Assessment Act*.

Having said that, those conclusions are supported by CNSC staff's technical assessments as well as assessments from technical specialists from a number of federal and provincial departments that have covered the range of issues that we encounter. Of all the interactions with the environment, the ones that are the most important are the ones on fish and, I would say, the discharge of heated waters as well as the taking in of cooling waters with the entrainment and impingement impacts.

MEMBER DOSMAN: Thank you very much, Dr. Thompson.

THE CHAIRPERSON: I'm sure, if and when we get the licensing, there will be a considerable amount of questions that will have to be answered.

Dr. McDill, round two.

MEMBER McDILL: Well, I think those two blanket questions just about covered everything. I would like the permission of the Chair to bring forward to the panel this afternoon the comment on the forage container on C-12 because it's not in the panel this afternoon. If that's possible, then I won't ask it here.

My only other ---

THE CHAIRPERSON: Just on that, Dr. McDill, that's not a problem and I think that would be adequate. We could do that for you, yes.

MEMBER McDILL: My only other question within the scoping is with respect to the construction islands -- or construction island: Is that scoped to be ventilated separately from the remainder of the facility?

THE CHAIRPERSON: To whom, first?

MEMBER McDILL: Bruce Power.

MR. HAWTHORNE: Duncan Hawthorne.

There are really two elements to the construction island. One, as I see it, to limit unauthorized access since the working arrangements and procedures within the construction island will be

different from the operational plant. So we actually have fence arrangements which are really there covered by administrative procedures so that only staff who have a reason to be in the construction island are actually in there.

The second piece is more fundamental in that because of the multi-unit facility and the common features of it, we have to separate the reactor vaults from Units 1 and 2 from the operational units. We do that through the introduction of bulkhead arrangements that will actually sit below the reactor face, the intention being that we can totally isolate the reactor vaults from Units 1 and 2 from the operation of Units 3 and 4.

So there's really two elements to the creation of the construction island. It's a physical boundary that actually allows us to work in Reactor 1 and 2 vaults without having any impact and being totally segregated from Units 3 and 4. And the second one is very much to establish a working boundary so that we can enforce the appropriate working arrangements.

MEMBER McDILL: Thank you.

Then can I ask staff: Is the hypothetical radiation dose based on the statement that was just made by Mr. Hawthorne, with separation of bulkheads and -- there's a -- sorry, I'll be more specific. I'm on page

32, 7.6.1.1 with respect to the refurbishment waste containers. Those, I assume, will happen in the construction island. That will be done in the construction island, separated from the other units and there's a hypothetical radiation dose proposed there in the vicinity of the drop. So if I'm understanding correctly, that will be happening in the construction island?

MR. GRANT: Ian Grant for the record.

Dr. McDill, could I just ask for clarification on the question? I understand you're on 7.6.1.1.

MEMBER McDILL: Yes.

MR. GRANT: And there's a reference here to a dose to public and the workers in the event of -- an incident involving drop of an RWC, a radioactive waste -- refurbishment waste container. Is that the question?

MEMBER McDILL: Yes.

MR. GRANT: Are we satisfied with that dose?

MEMBER McDILL: Yes.

MR. GRANT: I'll ask Mr. Riverin to respond.

(SHORT PAUSE)

DR. THOMPSON: Patsy Thompson for the

record.

The information contained in section 7.6.1.1, that you referred to, has taken into consideration the release of radiological contamination within the site where the work is going to be done and it is for workers in the vicinity of the dropped material. In terms of doses to members of the public, it's what would be carried through the ventilation systems and filtered before release.

MEMBER McDILL: I was more concerned about the worker.

Thank you, Mr. Chair, that concludes my questions.

THE CHAIRPERSON: Dr. Barnes, you have nothing more. That then will end the first round and we'll take a five-minute break so the intervenors can get into place and so on.

Also, I'm not sure, Mr. Grant, whether you can get the answer to Dr. Dosman's question in that time, but if you can have it -- if you can't by after lunch -- after lunch, we can do that because I don't think it reflects on the Intervenors.

So we will take a five-minute break and be back at 11:28 -- at 11:30, I guess, my secretary tells me.

--- Upon recessing at 11:24 a.m.

--- Upon resuming at 11:32 a.m.

THE CHAIRPERSON: We will now move into the interventions and before we start I would like to remind intervenors appearing before the Commission today that we have allocated 10 minutes for each oral presentation and I would appreciate your assistance in helping us maintain that schedule.

Your more detailed written submission has already been read and will be duly considered. I would like to move to our first oral presentation by the Municipality of Kincardine, as outlined in CMD 06-H12.2. Mr. Glenn Sutton, Mayor, is here, is present here today to present his submission. I would like to welcome the mayor. I don’t think this is the first time. You’ve been here before. So we’d like to welcome you here today.

The floor is yours.

06-H12.2

Oral presentation by the

Municipality of Kincardine

MR. SUTTON: Thank you, Chair Graham and members of the Commission. My name is Glenn Sutton, Mayor of Kincardine. On my right is Councillor Howard Ribey who will talk to you about Impact Advisory Committee comments later. I would like to read my letter into the record and I’ll go into a few additional points.

As the Municipality of Kincardine, which is a host community to the Bruce Nuclear Complex, I bring this letter in support of Bruce Power and their application for Bruce A refurbishment for life extension and continued operations project.

Initially, I'd like the Commission to know that as a nuclear engineer and as a former employee of the Bruce site, I, like many of the citizens of the Municipality of Kincardine, have a good understanding of how nuclear operations at the site are conducted. I am also very familiar with the role of the CNSC in these public hearings.

Our municipality is of the understanding that Bruce Power has applied to the CNSC to amend its current operating licence to facilitate three issues. Number one is Bruce Power's intent to apply for a licence amendment to return to the service Units 1 and 2 of the Bruce NGS to service up to and including year 2043.

The second issue is that Bruce Power may consider the refurbishment of Units 3 and 4 at a later date with a view to extending their operational life to 2043.

And finally, issue three, Bruce Power will seek authorization to use Low Void Reactivity Fuel in the Bruce A reactors and operate them at maximum power outlet.

Based on these three licensing issues, Bruce Power was required to conduct an environmental assessment to evaluate if the proposed project may cause any significant adverse environmental effects with due consideration to mitigation measures.

Based on the aforementioned issues and my role as mayor, I wish to document the key stakeholder communications undertaken by Bruce Power; for example, use of community newsletters such as these. I have in my left hand there Issue Number 1, Winter 2004 through Issue Number 3, Fall 2005. Also, we have monthly Nuclear Liaison Committee Meetings with both Bruce Power and Ontario Power Generation to discuss the projects and garner stakeholder feedback.

Next, we participated in a series of Bruce Power open houses in November and December of 2005. I can personally attest that I attended the November 22nd, 2005 Bruce Power open house at the Best Western Governor's Inn in Kincardine.

Next, there was participation in the CNSC's open house held in Kincardine, Ontario, on January 24th, 2006. So I can also attest that I attended the CNSC's open house as well as that at the Best Western Governor's Inn.

Also, finally, for communication purposes,

encouraging use of the Bruce A website with the address there you can read.

Finally, we have copies of the Bruce A Plant Life Extension Environmental Assessment Study Report. Volumes 1 and 2 have been placed at our two public libraries in the Municipality of Kincardine, specifically the Kincardine and Tiverton Libraries, branches of the Bruce County Public Library System.

From this public availability of information as afforded by Bruce Power, many citizens have engaged myself in positive discussions about our community's future and the need to continue to be an energy provider for the province of Ontario.

I would like to let the Commission know that Bruce Power has always been open and transparent in their communications with all of their stakeholders.

This host community petition of support for the Bruce A refurbishment for life extension and continued operations project is enhanced by the recently approved Refurbishment Waste Storage Project at the western waste management facility. This Refurbishment Waste Storage Project will indeed compliment the ability for Bruce Power to handle its waste products at the western waste management facility both now and in the future, specifically for the steam generator storage buildings,

the retube waste storage buildings and additional inground containers.

As a closing comment, I wish to reiterate that any activities or projects undertaken by Bruce Power are always completed to very high safety standards, whether they be nuclear safety, employee safety, or public safety, this is a given. I want to emphasize that today.

I further wish to add, I reserve the right to make additional verbal comments today and look forward to answering questions.

Therefore, based on the findings of the environmental assessment screening report in front of you and the recommendations by the CNSC staff, the Municipality of Kincardine fully supports this project. Public support was clearly built through the ongoing public engagement process used by Bruce Power and the openness and trust afforded by the CNSC in its nuclear licensing applications.

Now, I gave to your secretary at the start of the hearing a few additional comments. You should have a copy of the one page letter there.

First off, errata: I confirm that I received the CD. The Municipality of Kincardine received the errata listing dated April the 6th, 2006. This CD with corrections to the screening report was included in

the package letter.

The second point is on the previous operation of the Bruce A as a four-unit station, Bruce A previously operated as a four-unit station for many years. In summary, the environmental impacts and return to service of all four units should be very similar to that period of time before.

Finally, the Bruce Power Support Centre: I, with other members of our counsel and the community and the press, attended the opening of the Bruce Power Support Centre last Thursday May the 11th, 2006. Of interest is that this new building has an environmental wetland for storm water control incorporated into the adjacent grounds, and I gave this as an example. This illustrates a commitment of Bruce Power to environmental issues.

I also want to go over the -- just a couple more verbal points. The CNSC, in February, released info 0756, which are the licensing processes for new nuclear power plants in Canada. In there there's detailed answers for typical questions but there are two flow charts that are in this document, and basically it shows that over the approximately 10-year life cycle, if you -- from start to finish, there's about two, two and a half to three years built in at the front end for new reactor construction in all of Canada, not just Ontario, for environmental

assessment process. But that also applies equally as well to refurbishment projects, whether it be in Ontario or New Brunswick, or possibly Quebec. So I'm not going to go into details there.

Next is the report from your staff, CMD 06-H12. I just highlighted a couple of findings from your staff on the Volume 1 and 2 of the environmental screening report.

First, staff summary is they're recommending that the Commission approve the screening EA report. On page 2 of your staff report Bruce Power lists the five elements of their proposal for retubing new fuel and those sorts of options.

Activities: On page 2 it states:

> "No new construction activities will be undertaken for this Bruce A project and no changes to existing approved waste management practices or systems have been proposed."

On page 5 and 6, 7.1 there's a screening process which lists nine separate environmental components that were identified for the screening panel review.

On page 7 it documents the definition of measurable change to an element.

Page 11 at the bottom of the page talks

about the public consultation process followed by Bruce Power in the last year to year and a half leading up to today's discussion, the Commission here.

Page 12 talked about seven issues raised by the staff, how they're dealt with, mitigation efforts.

Finally, page 14 has two conclusions. The first one of which the screening report meets the requirements of the Canadian *Environmental Assessment Act*, and secondly, the project, if approved, will not likely cause significant adverse environmental effects and it goes back to the recommendation before you today.

Now, my former remarks, a couple of other overall comments. I let the Commission know on the subject of emergency preparedness in December last year our municipality conducted a tabletop exercise and a training session of our staff but also the OPP, fire department and so on, and our municipal operation centre in Kincardine in the basement of the Westario Power building to go through the procedures which are always being revised. We've issued revision 7 to date of our emergency procedures. It's on our website available for public use. We have copies available.

Next, on the subject of security at the site, we did arrange a number of months ago -- we had a tour this Wednesday of Julian Fantino, the Commissioner of

EMO, Emergency Measures Ontario from Ontario to our fire hall in Kincardine; the basement of Westario Power where he was toured for a short period of time through the operations centre, which we activated as required; had lunch in our municipal offices; met some emergency committee members, they went to Bruce B -- getting to the point -- for about an hour and a half where we went through the station. I was with them just to see the station at the site and the security arrangements and so on.

Also it was in Bruce Power's presentation, it's been mentioned twice, AMEC NCL, who are the project coordinators for the project, have leased for four years from our municipality, the former W. Thompson Public School to use as an employee induction and training centre. The old wing's been torn down. It's been upgraded with new paint and carpet. That will be where the new employees, going through offsite for a week or so, get new training on safety and other aspects of work protection and so on.

In conclusion, one of the core objectives of your CNSC Commission is to ensure openness and transparency in the public consultation process, wherever it is across Canada and Ontario. Our own counsel, we try to, as I can vouch, we try to make our counsel meetings as

much as possible open and transparent. So I think we're on the same page there. But basically, your Chair Linda Keene and some of your staff visited Kincardine and Saugeen Shores, about a year and a half, two years ago, for a day and a half or so, I would like to invite you on behalf of our municipality, and I'm sure other municipalities would agree, if you feel like another visit in the near future or whenever, feel free to attend not just our counsel chambers but meet with our residents to talk to them on the site and just see how the impacts of the site, how they're received in the community and so on.

So that concludes my comments and I'll take any questions you may have now.

Thank you.

THE CHAIRPERSON: Thank you very much, Mayor Sutton, and thank you for the invitation for the Commission to visit again. I was one of the Commissioners that did attend that tour of Bruce back several years ago.

I will now open the floor to questions.

Dr. McDill.

MEMBER McDILL: One question, Mr. Mayor.

The project location includes not only Kincardine but several other local communities. How are you going to cope with the -- if this goes to licensing -- the influx of 1800 skilled workers?

MR. SUTTON: A good question. Thank you for that.

About two months ago Bruce Power had an update session for the local councils of Kincardine and our four surrounding municipalities, Saugeen Shores, Arran-Elderslie, Brockton, Huron-Kinloss south of Kincardine. Members of our council attended, also members of the press. At that information session we were informed that the numbers have gone up from approximately 1500 to 1700 construction workers over the four-year period.

Answering your question though, specifically, we have been anticipating this and working closely with developers for both building lots and also commercial industrial development, looking ahead once it starts to lay some groundwork in the future to support the construction workers coming in. And based on past practices construction workers like it so much in that area that they put down roots and they try and stay there as much as possible.

So that’s one aspect to your question. And at our monthly meetings with the liaison committee and impact advisor committees, specifically IAC, all representatives from the five local councils are in attendance with Bruce Power and OPG and we talk about

these impacts -- those sorts of things all the time. And about a year and a half ago Bruce Country Council, I happen to be a member of, had a housing needs analysis study done. We've hired a housing research analyst to study these issues and we have that report available. So that's how we try and project ahead on demand for housing. Previous studies have shown that for each new permanent job created there's about 2.1 approximately spin off jobs in the retail and the service sector.

MEMBER McDILL: Thank you.

Just for completeness I'll ask if staff has any comments.

MR. RIVERIN: Guy Riverin for the record.

Yes, there was an assessment done on the socio-economic impacts which the results of which seem to be positive.

MEMBER McDILL: Thank you, Mr. Chair.

THE CHAIRPERSON: Dr. Barnes?

Therefore, thank you very much for coming, Mr. Mayor, and your presentation as an intervenor was much appreciated.

We will move to the next submission, which is an oral presentation by South Bruce Impact Advisory Committee as outlined in CMD 06 H12.3. Mr. Howard Ribey, chair of the South Bruce Impact Advisory Committee is here

as a presenter.

Mr. Ribey, the floor is yours.

06-H12.3
Oral presentation by the
South Bruce Impact
Advisory Committee

MR. RIBEY: Good morning. Thank you, Mr. Chair. It's Ribey, but that doesn't ---

THE CHAIRPERSON: I apologize.

MR. RIBEY: No problem.

Yes, first may I take this opportunity to thank you for the opportunity to comment on the environmental assessment of the proposed Bruce A refurbishment and life extension of the Bruce A Nuclear Station.

The South Bruce Impact Advisory Committee is composed of elected representatives of the municipality of Arran-Elderslie, Brockton, Huron-Kinloss, Kincardine, Saugeen Shores and the county of Bruce. We also have representation from Bruce Power and OPG Western Waste Management, whichever you wish to call it, and the Saugeen Shores Business Enterprise Centre. We do have meetings pretty well every month and we review opportunities and operations of the nuclear site.

In regards to comments, it will be confined to the environmental assessment of the proposed Bruce A refurbishment and life extension of the Bruce A.

The environmental assessment process provided sufficient opportunities for members of the Impact Advisory and citizens in the area that members represent to find out details of the project, to ask questions and get suitable answers and to make comments, and a lot of the questions that was asked was probably asked by yourselves this morning. A lot of times we didn’t have to ask the questions. People like Mr. Hawthorne gave an explanation of the procedures so we were quite comfortable with some of the answers that you people were given this morning.

Although the IAEC members are not experts about nuclear safety it is clear that Bruce Power has a strong culture and stresses all aspects of safety. Bruce Power provides updates on the issues with respect to conventional environmental and nuclear safety at the beginning of their monthly report. The fact that the employees of Bruce Power live in all of the communities in our area is a sign of the confidence they have in the nuclear industry.

The socio-economic conditions are also a very important aspect of the project and have a huge

impact on the Bruce community as well as the direct employment on the site. The spin off of the refurbishment and life extension will provide job security and prosperity to our area for a number of years.

Bruce Power has demonstrated its community spirit by being a major donor to the medical clinics of Saugeen Shores and Kincardine as well as the hospitals, health charities, not for profit organizations and festival and events throughout the Bruce community that depends on local support.

The level of support in our local community is shown by the following motion which was passed by the Impact Advisory meeting on January 19th, 2006. The motion read as follows, moved by Rob Bonderud and second by Mitch Twolan:

> "Whereas Ontario Power Authority in its supply mix reports stated that Nuclear Generation has a continuing role for base load needs and its current contribution of 50 per cent of electrical generation is not expected to change."

And whereas the OPA report stated that refurbishing existing units, rebuilding on existing sites and undertaking new built plants can all contribute to

maintaining the share of nuclear and Ontario supply mix at roughly its current level."

Therefore, be it resolved that the member municipalities of South Bruce Impact Advisory is supportive of nuclear power and has strongly endorsed the refurbishing of the existing reactors at the Bruce site and endorse the recommendations of the Ontario Power Authority. It goes on to suggest that we do support the new bill but that's not up for discussion today.

We note in the report that the CNSC staff have reviewed the EA study report and comments received from techno-reviewers in other federal departments. On the basis of its review of the documentation received to date, the CNSC staff have recommended approval of the project.

In closing, we wish to emphasize the openness of the process and transparity, the support the Bruce community has shown for the project. We recognize that as the approval panel, your concerns may be in regard more to safety than the aspect of the economic benefit to our area. Bruce Power in its operation has proven to us that safety of the environment, public and its workers is paramount to its operations.

Mr. Chair, members of the panel, the Bruce community fully supports the project and respectfully asks

that you will endorse the environmental assessment, that the project may move forward.

Thank you.

THE CHAIRPERSON: Thank you very much, Mr. Ribey, and I apologize for the mispronunciation. We had a little bit of that yesterday also.

I will now open the floor to questions. Dr. Dosman, do you have any questions? Dr. Barnes? Dr. McDill?

If not, thank you very much for coming today and participating in these hearings.

We will now move to the next submission which is an oral presentation by the Power Workers' Union as outlined in CMDs 06-H12.4 and 06-H12.4A. Mr. Peter Falconer, Vice-President of the Power Workers' Union is here to present with other members.

Mr. Falconer, just take a moment for you to come to the -- here as a presenter, and the floor is yours.

And there are some overheads with this presentation.

06-H12.4 / 06-H12.4A
Oral presentation by
Power Workers' Union

MR. FALCONER: Mr. Chair, members of the Commission, my name is Peter Falconer.

I am the Vice-President of the Power Workers' Union, Nuclear Sector, and I have with me today Howard Phorson, the Power Workers' Union Chief Steward for the Operators at Bruce Power, and Paul Reece, Power Workers' Union Staff Officer on Health and Safety.

Our comments today will be brief as you have already had our written submission. We will highlight a few issues from our written submission and update the Commissioners on ours.

The PWU represents 2,300 members at Bruce Power. These members are the frontline workers and they live with their families in the surrounding communities. These workers are naturally concerned with environmental issues in their workplace and in the community.

Our presentation will consist of comments on the following: PWU views on Bruce A environmental risks; PWU and Bruce Power joint health and safety efforts; an update on staffing issues; our summary and conclusions.

Environmental risks: The health and safety of our members has been and still is an issue above all others that has dominated at the PWU's agenda throughout our history. We believe that the same hazards that can

harm workers in the workplace will also harm the environment. By eliminating and/or controlling these hazards in the workplace results in protection of the workers and also the environment. This has been and still is a main aim of the PWU.

The PWU meets the same by participating with Bruce Power in the following forums.

Joint Policy Committee: This committee provides a forum to discuss health and safety and environment issues with the leadership of the workplace parties. The goal of this committee is to participate in the formation of health and safety strategy and policy by providing information and opinion from the Union to the company's executive on employees' health and safety. This committee is supported by a working committee and meets monthly. It consists of representatives from appointed from each of the parties.

The Joint Committee on Radiation Protection, the members are from the workplace parties. The main function of this committee is to provide with respect to employee and public health and safety, group recommendations on improvement to the radiation safety program to the company.

The local joint health and safety committees: There are five joint health and safety

committees at the Bruce site and one specifically for Bruce A. These committees have the full support of the employer and the unions. They have a good history of identifying workplace and environmental hazards and having them eliminated and/or controlled.

The workers have rights identified under OSHA and have additional rights that have been negotiated between the parties.

We indicated a concern in regards to staffing in our written submission and I will update the Commission on this subject. Although this is not an immediate issue that will have an effect on the environment at this time, it is our belief that regular staff that are experienced and fully trained are the best barrier to preventing any hazards from being -- any hazards being exposed to workers or the environment.

Due to our demographics, many PWU members will be retiring in the next few years. We have concerns that there will not be a sufficient number of new hired staff in time to maintain these same levels of expertise and experience that we have in our current staff complements.

An aging workforce is not a unique problem affecting only Bruce Power. I was at an international nuclear workers conference last week where I heard that

the majority of nuclear plants in the world are facing the same situation with staff demographics. This is going to be a challenge for the companies as well as the regulators.

We are currently in discussion with Bruce Power in this regard and are committed to working with them to resolve the issues. We will report to the Commission on our progress in this area at a future hearing.

In summary, the PWU supports the conclusions of the Screening Report and strongly recommends that it would be accepted by the Commission. We will be happy to take any questions that the Commissioners may have. Thank you.

THE CHAIRPERSON: Thank you, Mr. Falconer.

The floor now is open and I'll go to Dr. Dosman first.

MEMBER DOSMAN: Mr. Chair, I might ask Mr. Falconer if -- do you have concerns that new workers hired to replace senior workers might not have the experience to be able to achieve the goals set out in the Environmental Screening Report?

MR. FALCONER: I would perhaps try and answer that from the standpoint that we believe that if new hires are hired early enough, that they are allowed to

get the proper orientation, provided with an opportunity to work with experienced workers in order to gain a level of experience, then we would not have concerns with that. If those conditions were not met, then we would have a concern that new workers are hired as old workers are leaving before the -- before there is an opportunity to pass on skills and experience to the new workers.

MEMBER DOSMAN: Mr. Chair, please help me. Does this relate specifically enough to the Environmental Assessment Screening Report to ask Bruce Power to comment?

THE CHAIRPERSON: In the context of the way you put your first question was, was within the confines of the Screening Report and I think I saw Mr. Hawthorne nodding his head when the answer was being given. So he might want to add a little bit to that.

MEMBER DOSMAN: Thank you.

MR. HAWTHORNE: Yes, Duncan Hawthorne for the record.

I entirely agree with the comments that Mr. Falconer has made. We do have a very challenging demographic and it's not specific to Bruce Power. I think he makes the point very well. It's an industry issue. It's a Canadian issue. In fact, it goes beyond the boundaries of Canada itself.

So we do have to be very aggressive and

proactive in making sure that we have well qualified staff. Frankly, we have a developing relationship with PWU to create our own purpose-built training facility to do just that. I think frankly it's too little for the industry as a whole. We are trying to manage our own environment but specific to this project, as I mentioned in my earlier remarks, much of this is a construction project. Much of it is construction workers. I think there's really two elements of the staffing piece that is the horse power, if you like, to be able to manage the project itself and do it efficiently and safely.

But there is a second issue which does border on the licensing piece, which is about Bruce Power having suitably qualified and experienced people to operate these additional facilities. So I think the comment is that in both of these areas, we have to succeed and is certainly a focus area for us.

MEMBER DOSMAN: Thank you very much.

THE CHAIRPERSON: Dr. Dosman, Dr. Barnes.

Dr. Barnes.

MEMBER BARNES: I was going to ask this sort of question in round two of our initial questioning, but I'll take the opportunity now.

So it really wasn’t entirely clear to me, Mr. Hawthorne. So let me give you the numbers which you

have given us. You have a basic staff complement which I read in the documents here of 3,750 to which you were adding 918 in the years 2001 to 2005 roughly and 959 new hires from 2006 to 2009, right? So you are basically from 2001 to 2009 adding “an incremental labour force” of about 1,800. It might average 1,200 on average.

What we didn’t hear was how many you also expected to retire to sort of normally -- you know, the demographic is not only what you need to capture. It's what is -- what is leaving your base workforce and this comes back to the intervenors’ comment on new people and being able to train them.

So could you give us some indication of the flow of this? And if I could ask just one other question, if you could give me your answer? Let me just see. 2012 gets us through the so-called construction phase. Is that correct?

So after at around 2012 when you got all eight units but you are past the construction phase, what would you anticipate to be your -- I'll say your base complement of staff relative to the 3,750 figure that I started with?

MR. HAWTHORNE: Duncan Hawthorne for the record.

Maybe I can break it down into three

things, and I apologize if our slide was misleading. Firstly, when we assumed control of the site on May 11th, 2001, physical transferred employees were 2,886. Of course, we acquired a four-unit facility. Since then, we have recruited, as the note says, 919 staff. Our actual complement, as I sit here today, is 3,693 people. With our staff complement number we're working on this year around 3,750.

Now, of course, you can see those numbers don’t all add up. The logic is that we -- some people have retired and been replaced. In addition, we have increased the complement to recognize we're going from four units to six units. As I mentioned, specific areas where we've increased complement would be those that relate to having extra units, operational staff, 123 new operators, more maintenance staff, et cetera.

So what is an ongoing activity for us right now is to try and ascertain as closely as we can what people’s retirement intentions are. It's very much the individual’s option but we've been receiving good cooperation from staff and what we've been asking them in an individual interview process is would they intend to retire within the next five years to allow us to frankly get ahead of the curve. We've been running to catch up and I think, you know, to the extent that Mr. Falconer

would comment, I think we've been coping with that. We are actually working very much to be more ahead of that.

So we have done what we call a work program analysis which tells us how much of this work is steady state and alongside that we look at people's intentions to retire so that we can proactively recruit, because I absolutely agree we need to do knowledge transfer. In terms of our final end result number, I would say that we are still taking some view on that. We have done benchmarking across the entire industry.

There are some things that don't necessarily incrementally increase as you go from four to six to eight units, but there are some ones that obviously do, such as mechanical maintainers, several craftsmen, operators, engineering staff; so all of the core line activities we expect to see some level of increase to deal with eight units versus six. But we haven't put a hard number on that at this stage. What we are doing is benchmarking where we are in all of the functions.

So it's a case of trying to be proactive, trying to get an assessment of people's retirement. I can tell you based on looking at the eligibility that at least a third of our employees are eligible to retire in the next four years, just by basis of qualification under the collective agreement.

Historically, about 25 per cent of people have taken that up. So what we're really trying to do is to ascertain with a bit more granularity what that looks like. Obviously, as a company we don't want to over-recruit because it's a high cost. But at the same time, we don't want to be caught short of vital resources and it's very much a balancing activity.

THE CHAIRPERSON: Dr. McDill.

Just one question I have, Mr. Falconer. You said you went to a seminar a week or so ago. When did it show that there was going to be a critical shortage of trained people; how many years, or was that given, just for the benefit of the Commission?

MR. FALCONER: From what we could gather, -- Peter Falconer for the record -- from what we could gather, talking to people from a variety of different countries that attended the seminar, the average ages of most of the nuclear workers seem to be up in the area of about 48 years of age. Most of them would be eligible for retirement within the next 5 to 10 years. So that meant -- I mean 50 per cent of those would be eligible for retirement in the next 5 to 10 years.

So that kind of demographic means that the companies need to start hiring quite soon if they wish to have a good transfer of knowledge, and recognizing that

those skills will be hard to find out in the marketplace. In addition, we have also got the situations where there is construction going on both within this province and other provinces in Canada that's also going to take away some of those skilled workers from the opportunity of working in the nuclear areas.

So we're concerned that companies need to be looking at this very, very seriously and I know Mr. Hawthorne has been involved with looking at that. It's very important that the future of the industry is not in any way impinged by a lack of skilled workers.

THE CHAIRPERSON: I don't want to contradict myself and get into licensing, but just the other question I would have is what involvement does your union have in encouraging people at the post-secondary level to go into or to look at going into this profession? Are you out there recruiting and encouraging and meeting with various people, not only in Ontario but right across the country?

MR. FALCONER: Peter Falconer for the record.

Yes, I am. Our organization is involved with trade up, which is one of the opportunities that we go to the schools and we encourage and show the students what's available within the nuclear industry;

opportunities for skilled trades, for example, is one of the things that we focus in. Plus, we have the training school at the hill on the Bruce Power site that's available for people to come and get trained in apprenticeships, for example.

So we're very actively out there promoting the opportunity of skilled training for the future.

THE CHAIRPERSON: Thank you very much.

Commission members, if there are no further questions, I thank you, Mr. Falconer, you and your associates, for coming today and making your presentation.

We will move to the next submission and we'll just take a moment for the next presenters to take their seats.

(SHORT PAUSE)

THE CHAIRPERSON: Thank you.

The next submission, which is an oral presentation by the Canadian Nuclear Workers' Council and the Grey-Bruce District Labour Council, as outlined in CMD 06-H12.5/06-H12.5A, and Mr. David Shier is here as a presenter.

The floor is yours, sir.

06-H12.5 / 06-H12.5A

Oral Presentation by

Canadian Nuclear Workers'
Council and the Grey-Bruce
District Labour Council

MR. SHIER: Thank you, and good afternoon, Mr. Chairperson and members of the Commission.

As indicated, my name is David Shier. I'm the President of the Nuclear Workers' Council and today I have with me Mr. David Trumble. He is President of the Grey-Bruce and District Labour Council, and also Mr. Kevin Mackay, which is also a member of that council and he is also the Canadian Nuclear Workers' Council site representative for the Bruce site.

Our comments are going to be very brief today, as you do have a copy of our written submission. I would indicate just quickly that the council, the Nuclear Workers' Council consists of the unions across Canada that are involved in the nuclear industry and the Grey-Bruce District Labour Council is the council of the unions in the Grey-Bruce area, as the name indicates.

We are going to cover off quickly a few comments on national and international perspective in this regard, the community perspective and then provide our conclusions.

In regards to a national perspective the members of our council support the work that is done by

the Power workers in regards to health and safety. This is a very similar safety culture developed in the industry across Canada and we are very confident that the factors -- hazards that will possibly injure workers are also the hazards that could, if not controlled, could injure the environment or the public. And with all the safety programs in place at Bruce Power we are quite confident that past practice and moving forward that indeed any of the safety issues will be resolved for the protection of workers and the environment.

Overall, all the unions and our council endorse our presentation here today and encourage the acceptance of the Screening Report.

From a community perspective I'd like to turn it over to Dave Trumble to give you his perspective as he deals with a lot of the people in the community in his role as a labour council president.

MR. TRUMBLE: Thank you, David.

And as David indicated, I am President of the Grey-Bruce Labour Council and, Mr. Chair, members of the Commission, we really do appreciate -- in fact, we find it quite an honour to be here to represent the 7,000 workers in the two counties of Grey and Bruce that the Grey-Bruce Labour Council is fortunate enough to represent. Of those 7,000 workers, a number of the unions

at the Bruce site, including the building trade unions, are active delegates to our labour council.

Our labour council consists, outside of those unions, of also a multiple number of private and public sector unions who have also indicated a strong support for our presence here and for the -- hopefully, the successful findings of the Commission on the 1-2 refurbishment EA.

Our labour council for over five years has been a constant supporter of Bruce Power. In fact, we have submitted ongoing resolutions and presentations to general labour organizations and, within our council and our community, have also been welcomed and successfully achieved some recognition. Embedded in these has also been a recognition of the current process that we are involved in.

In essence, the labour council sees no detrimental environmental impact to the restart project.

Further, if I may, the labour council delegates are also extensively involved in outreach in the community, a partner in outreaches often then Bruce Power. Some of those outreach activities are the Speakers Bureau which has a huge, huge emphasis on health and safety, and our coalition partners such as agricultural groups, women shelters and social and community groups that are like-

minded. Some issues that we may have common ground on with these other groups would be sustainable things such as sustainable energy, education and healthcare.

So it is my pleasure as President of the Labour Council and as to work with my co-presenters to indicate a strong support for the 1-2 restart refurbishment and to indicate once again that we do not see any negative environmental impacts to the ongoing project.

Thank you for your attention. I'd be happy to entertain any questions.

MR. MACKAY: Mr. Chair, Commission; for the record, Kevin Mackay, Canadian Workers' Council Representative for Bruce Power.

I thank you for the opportunity to come here and speak. The Canadian Nuclear Workers' Council would like to register support for the Screening Report and the analysis and conclusions for the refurbishment and the life extension of Bruce 1 and 2.

Our observations of the operations of Bruce Power facility over the last five years show that there is a high level of safety and environmental soundness. Canadian Nuclear Workers' Council sees Bruce Power as an economically-viable source of electricity for the future of Ontario and I'd be happy to entertain questions.

Thank you.

MR. SHIER: Thank you, Kevin.

In conclusion, the Canadian Nuclear Workers' Council and the Grey-Bruce District Labour Council believe there will be no serious impediments to the environment created by the refurbishment of Bruce Units 1 and 2 and we encourage the CNSC Commission to support -- to accept the Screening Report.

Thank you very much.

THE CHAIRPERSON: Thank you very much, gentlemen, for all three presenters.

The floor is now open for questions. Dr. Dosman.

MEMBER DOSMAN: Mr. Chair, I'd like to ask Mr. Mackay what your view is as to the attitude of the workers onsite to the training that will be required to adequately participate in the refurbishment process.

THE CHAIRPERSON: In the context of the Screening Report.

MEMBER DOSMAN: Yes.

MR. MACKAY: You're speaking about the training for the construction people coming to the site?

MEMBER DOSMAN: Well, both for the construction people -- for the people in your union that are involved, how is their attitude? Are they accepting

of the training that's required and are they participating enthusiastically in the context of the Environmental Screening Report, the implications and so on?

MR. MACKAY: The Power Workers' Union would have to address how the Power Workers' Union members feel towards training with their folks. As a representative of the Canadian Nuclear Workers' Council itself, I take what I see onsite to a bigger group that is involved not only with the production of electricity but also with radionuclides in mining and fuel. So we take the information that we receive as favourable. There is a huge amount of training not only with our own PWU staff but also community involvement, the Huron Shores training consortium which is now being finalized will help with what was discussed earlier to bring youth involved -- getting youth involvement in some of the trades and skills required for the future of this industry.

THE CHAIRPERSON: Thank you.

Dr. McDill, Dr. Barnes.

If not, thank you very much, gentlemen, for coming today and making a presentation as intervenors.

We'll move now to the last, I believe, oral submission, which is an oral submission by the Town of Saugeen Shores as outlined in CMD 06-H12.17. Mr. Mark Kraemer, Mayor, will be the presenter.

And Mr. Mayor, the floor is yours.

06-H12.17

Oral presentation by the

Town of Saugeen Shores

MR. KRAEMER: Thank you, Mr. Chair, members of the Commission.

It is indeed again a pleasure to sit before you for one of these particular hearings. I am grateful that the Town of Saugeen Shores continues to allow me to do that. For a little bit of a history lesson, I am finishing my third term as mayor of our particular municipality so this, therefore, since there is an election this fall, may be the last time I sit before you, Mr. Chair.

It is with much pleasure that I accept the invitation from you to be here today and I really want to roll the calendar back a little bit because I find that in a lot of cases what we deal with today has a lot to do with history, and I'm a great history buff in terms of where we have come from and how we got to where we are today.

And to give you a little background on that, I have been fortunate enough to live in the best municipality in this province for the past 23 years and I

have witnessed the evolution and the rise and fall, I should say, of the Bruce Nuclear Power Development over that period of time through what is now the third operator. I have been present when eight reactors were running full speed. I have also, unfortunately, witnessed the devastation of that site when the Bruce A was shut down in 1997 and I must admit that amalgamation in Bruce County in January the 1st of 1999 created some enormous challenges for our municipality. Previous to that date we enjoyed the status of co-host municipality for the Bruce Nuclear Power Development. On the 1st of January, 1999 we lost that designation. You can understand that that would cause some concern to us in terms of whether or not we would continue to be considered part of the equation, whether we would be considered to be a partner and whether we would be able to continue to dialogue with the operators of the Bruce Nuclear Power Development in a manner in which we had become accustomed.

I'm happy to admit that on May the 11th of 2001 all of those fears were put to bed. When Bruce Power assumed the operating status of the Bruce Nuclear Power Development, they understood very early in the equation that they were not a silo. They were not capable of doing this on their own and that they did, indeed, require to reach out and partner with multiple organizations, with

multiple business partners, but most importantly with the community as one of the most significant partners that they would deal with.

I'm happy to report that while we had concerns about losing our status as a host municipality, the community dialogue, the partnership that has been created with Bruce Power over the past five hears has been absolutely tremendous in allaying any fears that any of our people may have around the operation of the largest nuclear facility in Canada.

The dialogue we enjoy and the community impact that we have established with Bruce Power is always open and transparent. It has been evidenced and recited previously through other deputators in terms of the process through this environmental assessment. And what I really want to do is look at two key VECs that were done as part of this environmental assessment. I am going to concentre obviously on socio-economic conditions, but I'm also going to touch on human health because there's an issue there I really want to share with you.

Socio-economic conditions; it goes without saying that when 40 per cent of the employees at Bruce Power live in our community, this organization has a huge impact on the life of our particular municipality. There are some negatives any time there is extraordinary growth

in any industry, in any community and in any municipality. But I must tell you that in the process of leading up to the rehabilitation of Unit 1 and 2, we really had a heads up when Unit 3 and 4 were brought back into service. I can assure you that Mr. Hawthorne himself has, on numerous occasions, volunteered to sit down with me and my council, one on one and basically share his vision. And that is not something you do in three or four minutes.

We value that interaction enormously because what it allows us to do is specific strategic planning that we can model around the impact that the expansion or the redevelopment or the redesign or the rehabilitation of the Bruce Nuclear Power facility will have on our community.

As recently as 18 months ago, we started into dialogue trying to respond to the influx of people that were going to come to our community, we hoped, as a direct result of the refurbishment of Units 1 and 2. We were fortunate in attracting two major developers to our community who have secured over 800 acres of land. We have approved subdivisions now capable of handling up to 450 new houses that could be built tomorrow. Infrastructure is done; our council committed to $15 million in expansions to our water treatment facility and we now have ample infrastructure in place for the next 20

years based on some very aggressive growth in population figures for our community.

Why were we able to do that? Because Bruce Power allowed us the opportunity to share their vision, took the time out of their schedules to sit down with us and say, "This is where we hope to be. These are the goals that we've established", and allowed us then to do what we saw fit with that information.

It is that type of partnering that allows you to grow, allows you to both be successful in the same forum but not to be competing and not to have challenges brought before you that create significant problems within your community. And it is because of that openness that there is an overwhelming support of what is happening in terms of the rejuvenation of the Bruce nuclear power development.

I also want to talk about human health, because human health to me, as Mr. Hawthorne has stated and as both of the previous deputators have talked about, is tantamount to the success of this project. It makes no sense to build bricks and mortar if you sacrifice life in the process of doing that. And the one thing that has impressed me the most about the attitude of Bruce Power corporately is that a year ago, in April, we were invited to participate in an initiative that was driven

specifically by Mr. Duncan Hawthorne and it was called the CEO Charter. If you haven't heard about that, you need to investigate it because it is one of the most unique systems and methods of sharing knowledge and protecting workers that I've ever had the pleasure of participating in.

In April of 2005, Saugeen Shores was the sole signatory to that document. The only municipality that joined into that venture, but I did it because it had such visionary items to it that I had not even thought of before. We all want to protect our workers. In fact, it should be our number one motivation when we do anything, and I have witnessed the downside of that because during the construction of one of our senior homes in Bruce County in 2002, a very young lady lost her life in a fall. I know explicitly what that's like to speak to those parents and I understand implicitly why safety has to be first and foremost.

Duncan Hawthorne created an organization that allowed us to share knowledge, but more importantly, it forced us and compelled us to be absolutely self-critical in a very public form. When just less than 70 CEOs signed the original Charter a year ago, we had to do a public evaluation of what our strengths but more importantly what our weaknesses were and the sole purpose

of that evening was to identify partners that we could sit down with and say, "I have a weakness here; you have a strength there. How can we help each other be better to protect our people?"

I am happy to report that the first anniversary meeting was held last month in Toronto and while we started with less than 70, we now have 150 signatories to that document, and I know that the targets for that organization are over 250 CEOs of corporations from coast to coast in Canada, and I will be stunned if we're not successful in doing that. The website you need to look at. It is dynamite. It is interactive and anyone has the ability to join this because if you are motivated to protect your people, I can't imagine any reason why you wouldn't join this organization.

This is not an advertisement for IAPA, but I wanted to you to know how important health and safety is not just to Bruce Power but to the town of Saugeen Shores and more importantly to the county of Bruce who also has signed this document as the second municipal organization to join this initiative.

Human health goes without saying, it absolutely has to be, has to be, managed and maintained and controlled, and it has to be your focus. It has to be the essence of your business and if it isn't you, in my

mind, are not successful.

I think Bruce Power has demonstrated their focus is on the safety of their people; their focus is on community dialogue; their focus is in partnering. You've heard that word used many times this morning, in fact, even used by the CNSC staff themselves. I think they understand why partnering is vital in success, and I truly consider them a partner of Saugeen Shores, especially as it pertains to the rehabilitation and the restart of Units 1 and 2.

And on behalf of the people of Saugeen Shores, I encourage the Commission to support the recommendation of this CNSC staff, as it pertains to this environmental assessment.

THE CHAIRPERSON: Thank you very much, Mayor Kraemer.

The floor is open for questions.

Dr. McDill, Dr. Barnes, Dr. Dosman.

Well, thank you very much, sir. We trust that you'll have success in your election.

MR. KRAEMER: And I wish you all a very happy Victoria Day weekend.

THE CHAIRPERSON: Thank you very much, when we get home.

We will now move to written submissions.

And the first written submission is by the Kincardine Business Improvement Area, as outlined in CMD 06-H12.6.

06-H12.6
Written Submission from
Kincardine Business
Improvement Area

THE CHAIRPERSON: Are there any questions with regard to that submission?

If not, we will move to the next submission which is a written submission by the Inter-Tribal Fisheries and Assessment Program and the Ontario Ministry of Natural Resources, as outlined in CMD 06-H12.7.

06-H12.7
Written Submission from the
Inter-Tribal Fisheries and
Assessment Program and the
Ontario Ministry of Natural
Resources

THE CHAIRPERSON: Are there any questions from members of the Commission?

Dr. Barnes first.

MEMBER BARNES: I wonder if probably staff but it could be Bruce Power, this indicates a wide study

on whitefish from a fisheries biological viewpoint throughout the Lake Huron basin. Could I just get some information, and it includes at the end of the second full paragraph there, a list of a half a dozen major agencies that are involved in that, including Bruce Power?

So maybe the comment should come from Bruce Power rather than staff; some on the U.S. side and some on the Canadian side, how this study will relate to what we've dealt with today about sort of the background studies that are ongoing.

MR. HAWTHORNE: Duncan Hawthorne for the record.

It was referred to briefly by CNSC staff that we do have an ongoing working relationship with our First Nations neighbours. I regard this as being sort of above and beyond the EA follow-up program. We talked to Dr. Crawford at the University of Guelph who is our consultant with the Chippewas of Nawash. They had an interest in extending the survey to your broader context. We talked about how we could assess them to get other partners and other funding, including your Fisheries and Oceans and Natural Resources, et cetera.

We have agreed a funding arrangement with them on whitefish. We are looking at trail and trap arrangements and how they would affect. So this is an

ongoing dialogue to -- First Nations communities, in my assessment, would be they would like a more lake-wide examination not specific necessarily to the operation of our facility but more a lake-wide assessment and survey. Clearly, Bruce Power is happy to support that but to take on, on our own, would be a very significant financial commitment. So we have certainly been prepared to financially support and we've been working to try and grow that coalition so that we can meet their interests.

MEMBER BARNES: And you expect that the results of this study will be made public?

MR. HAWTHORNE: Certainly, the results of the survey would be made available to staff. How the information would enter in the public domain, I guess, would be a question of some debate. Certainly, it's an issue for all of the participants. We'd wish to have the data, use it for analysis, use it for their own benchmarking and assessment studies. I couldn't say honestly that I could tell you how it would reach the public domain. It isn't our intention to have a publicly furnished report. It's really for the interests of the participants. Yet, the findings of it would no doubt be made public.

THE CHAIRPERSON: Dr Barnes? Dr. McDill? Okay. Then we will move to the next

submission, which is a written submission by the Corporation of the Municipality of Arran-Elderslie, as outlined in CMD 06-H12.8.

06-H12.8
Written Submission from
The Corporation of the
Municipality of Arran-Elderslie

THE CHAIRPERSON: Are there any questions?

If not, we will then move to the next submission, which is a written submission by the Municipality of Brockton, as outlined in CMD 06-H12.9.

06-H12.9
Written Submission from the
Municipality of Brockton

THE CHAIRPERSON: Any questions.

The next submission, which is a written submission by the Saugeen Valley Conservation Authority, as outlined in 06-H12.10.

06-H12.10
Written Submission from the
Saugeen Valley Conservation
Authority

THE CHAIRPERSON: Questions?

If not, we will move then to the next submission, which is a Written Submission by the Township of Huron-Kinloss, as outlined in CMD 06-H12.11.

06-H12.11
Written Submission from the
Township of Huron-Kinloss

THE CHAIRPERSON: Questions?

We will then move to the next submission, which is a written submission by Mrs. Carol Mitchell, M.P.P. for Huron-Bruce, as outlined in CMD 06-H12.12.

06-H12.12
Written Submission from
Carol Mitchell, M.P.P.,
Huron-Bruce

THE CHAIRPERSON: Questions or comments?

If not, we will move then to the next submission, which is a written submission by Florence Mackesy, I believe I’m saying that right, as outlined in CMD 06-H12.13.

06-H12.13
Written Submission from

Florence Mackesy

THE CHAIRPERSON: Any questions?

Dr. Barnes.

MEMBER BARNES: Two questions here just for clarification, issues raised by the intervenor.

Her second paragraph on transmission is more or less asking the question, I think, "Is there any new additional" -- I presume that means transmission lines "that would be required for the full operation for all units of Bruce A and B"?

Is that true that there will be no new transmission lines required?

MR. HAWTHORNE: Duncan Hawthorne for the record.

I guess there are two elements to it, Commissioner, there. Of course, the site was an eight-unit facility previously and so you would have the feeling that it should be able to accommodate the existing outputs since we're returning the units. There is, however, some discussion with Hydro One to -- as a consequence of coal closures and other anticipated changes -- there may be changes to power flows. It's a matter that was controlled by Hydro One to the extent they would need to do additional transmission. Of course, that would be subject to a provincial EA for transmission lines.

We had the view that if you were just looking at Bruce Power on its own, that it would be possible to accommodate the additional output with some capacity of changes to the line and it wouldn't require new transmission.

I have to say it's an open discussion right now because it's tied to other government policies in terms of new wind or closure of coal plants.

MEMBER BARNES: And my second question raise to point 3 at the bottom, perhaps to staff, which suggested restart had been done even though CNSC approval had not been obtained.

Could I just get assurance that none of the work associated with this is ongoing without appropriate licences?

MR. WEBSTER: Phil Webster for the record.

Yes, staff can confirm that. We have ensured that Bruce Power understand that although certain proprietary activities such as design or inspection or procurements are allowed, they should not undertake any physical work that could be regarded as being part of the environmental assessment.

THE CHAIRPERSON: Dr. McDill?

Great minds think alike. Okay. We will then move to the next submission.

Oh, pardon me, Dr. Dosman, do you have any questions?

We will move to the next submission which is a written submission by the 7 Building Trade Unions, as outlined in CMD 06-H12.14.

06-H12.14
Written Submission from
7 Building Trade Unions

THE CHAIRPERSON: Are there any questions or comments, Members?

If not, we will move to the next submission which is a written submission by the Sierra Legal Defence Fund as outlined in CMD 06-H12.15.

06-H12.15
Written Submission from
Sierra Legal Defence Fund

THE CHAIRPERSON: Any questions? Dr. McDill.

MEMBER McDILL: Thank you.

I wonder if I could just ask staff to make a general comment on the last paragraph of the submission with respect to radioactive contamination standards.

DR. THOMPSON: Patsy Thompson for the

record.

The issues raised by the Sierra Legal Fund essentially compares the manner in which the release of radioactivity from an operating plant is regulated in comparison to regulations for hazardous substances from industrial plants.

The approach to radioactive releases is not based on, for example, an air standard or a water quality standard, because in the case of radiological contaminants the exposure isn't by a single pathway. For example, setting an air standard for nitrogen oxides, since the primary exposure pathway is through inhalation, makes sense. In the case of radioactive releases to the atmosphere, for example, there may be exposure through breathing contaminated air. They will -- may be absorbed by food. People will have several pathways by which they can be exposed. And so the approach to regulating radio-nuclides is to set a public dose limit, assess exposure of members of the public residing around the nuclear facilities and then controlling at source the releases and ensuring that they're not just below the public dose limit but also ALARA.

And so the approach is different but certainly the controls are in place and we do verify that the controls by the licensees are effective.

MEMBER McDILL: Thank you.

THE CHAIRPERSON: Dr. Barnes or Dr. Dosman.

MEMBER DOSMAN: It's in the same line, in the third paragraph. I believe Dr. Thompson's comments referred to the last paragraph. The third paragraph, the first sentence concerning enforceable standards for radioactive contaminants, have you adequately commented on that in your last comments, Dr. Thompson, or would you be willing to address that sentence?

The first sentence, Mr. Chair, of the third paragraph of the letter from the Sierra Legal Defence Fund.

DR. THOMPSON: Patsy Thompson for the record.

Are you referring, Dr. Dosman, to the comment about enforceable ---

MEMBER DOSMAN: Yes.

DR. THOMPSON: --- standards?

MEMBER DOSMAN: Yes.

DR. THOMPSON: The CNSC does have an enforceable standard which is the radiation -- the public dose limit for radiation of 1 milliSievert. The control on the operation of the facility is based on that standard or that regulatory limit and the requirement to keep doses as low as reasonably achievable, below that regulatory

limit. So there is an enforceable standard.

THE CHAIRPERSON: Thank you, then.

We will now move to the next submission which is a written submission by the Waterloo, Wellington, Dufferin & Grey Building & Construction Trades Council, as outlined in CMD 06-H12.16.

06-H12.16
Written Submission from
Waterloo, Wellington, Dufferin
& Grey Building & Construction
Trades Council

THE CHAIRPERSON: Any questions, comments?

If not, we will move then to the next submission which is a written submission by the County of Bruce, as outlined in CMD 06-H12.18

06-H12.18
Written Submission from the
County of Bruce

THE CHAIRPERSON: Any questions?

If not, I believe that is all of the submissions that we have today, written and oral. And before I speak to the Secretary to close this meeting, I'm going to ask Mr. Grant if he has an answer to Dr. Dosman's

question relating to the levels and the difference between or calling it apples and apples, sir.

Do you have an answer to address Dr. Dosman's question of this morning?

MR. GRANT: Thank you.

Mr. Graham, yes, we've made some inquiries of the relevant staff and I'll ask Dr. Thompson to provide the explanation on the classification of different categories of radioactive waste.

DR. THOMPSON: Patsy Thompson for the record.

Essentially the question referred to the waste classification criteria provided on page 24 of the Screening Report which talked about low level waste being waste with a dose rate of less than 10 milliSieverts per hour at 30 centimetres from the surface and intermediate levels waste between 2 milliSieverts per hour to greater than 150 milliSieverts per hour on contact, and I guess it was the discrepancy between where the measurements are taken.

The staff's position is that the CNSC regulations do not specify waste classification criteria. What is the normal process that staff follows is that the criteria for classification of waste are proposed by licensees and those criteria will vary from licensee to

licensee and from -- the purpose of establishing the criteria.

What we do is we review and assess the proposed criteria using guidance provided by the International Atomic Energy Agency in terms of how -- for waste management purposes. In terms of worker protection, which this refers to, the licensee proposes waste classification criteria for the purposes of worker radiation protection programs and protection. What staff does is will assess the criteria and then the radiation protection procedures proposed by the licensee to ensure that the workers handling the material will not get undue exposures to radiation, and that's the intent of the description of the criteria.

But our understanding is there's no standard requirement for measuring radiation exposure from waste that is essentially uniformly applied and we don't have any regulations specifying those criteria, but we ensure that however they are measured, that then the radiation protection procedures are adequate to protect workers on the basis of what is proposed by the licensee.

MEMBER DOSMAN: Mr. Chair, would it be appropriate to ask staff if staff would be willing to look into the issue of terminology or definitions that would facilitate a more transparent comparison between the

definitions of low level waste and the intermediate level waste, not necessarily in the context of this hearing but perhaps for the future?

DR. THOMPSON: Patsy Thompson for the record.

We will consider your request. What I suspect is it will be difficult to enforce a uniform way of conducting those measurements in a classification and essentially it's because the waste acceptance criteria, for example, for the waste management facilities that we regulate are different. But we do make sure that the way the wastes are being handled, stored and managed in the short, medium and long term is appropriate. But I will -- we will take your request into consideration.

THE CHAIRPERSON: Thank you very much, ladies and gentlemen, and for your tolerance with the Chair today. I'll turn it over now to the Secretary.

M. LEBLANC: Thank you, Mr. Chair.

This completes the record for the public hearing on the matter of the Environmental Assessment Screening Report regarding the proposal for the Refurbishment for Life Extension and Continued Operations of Bruce A Reactors at the Bruce A Nuclear Generating Station.

The Commission will deliberate and will

publish its decision in due course. It will be posted on the CNSC website and will be distributed to participants.

Thank you.

THE CHAIRPERSON: This brings to a close the public hearing of the Canadian Nuclear Safety Commission. I would like to thank all of those that are here in attendance today.

The Commission meeting will start at 2:00 o'clock or one hour from now, 13:40, 20 minutes to 2:00. Thank you very much.

The hearing will also -- then after the meeting, this will be followed by a hearing of a panel of the Commission on the application to begin the Demonstration Irradiation phase of the Bruce B New Fuel Project.

So that will be shortly after the meeting. The meeting shouldn't take too long. So that will be immediately afterwards, for the benefit of the Bruce staff.

Thank you very much.

--- Upon adjourning the public hearing at 12:47 p.m. to commence the meeting at 1:40 p.m.