Ontario Power Generation Inc.:
Application for the renewal of the
Darlington Nuclear Generating
Station operating licence

07-H20.1 / 07-H20.1A
Oral presentation by
Ontario Power Generation Inc.

MR. MITCHELL: Madam Chair, this is Tom Mitchell, for the Record, and I just thought I would briefly introduce the members of my executive team here today, make a couple of brief remarks, and then turn it over to Wayne.

I am the Chief Nuclear Officer of OPG. We are pleased to appear before you today to discuss our application for licence renewal of the Darlington Nuclear Station.

In the centre of the next table is Mr. Wayne Robbins. He's the Senior Vice-President at Darlington.

And next to him is Mr. Craig Sellers who is the Vice-President of Engineering and Modifications and is also Ontario Power Generation's Chief Nuclear Engineer.

These executives directly report to me and are responsible for operations in support of Darlington.

We believe that the information that you have before you today reflects Darlington as a safe, reliable, and well-run nuclear station that has continued to show operational improvements.

We also understand that there are areas that need continued attention and organizational focus such as environmental qualification.

Darlington and OPG staff are committed to working with the CNSC staff in addressing these issues in a timely fashion.

I will now turn it over to Mr. Robbins who will give our presentation. Wayne?

MR. ROBBINS: Thank you. Madam Chair and Commissioners, I am Wayne Robbins, Senior Vice-President of Darlington and, Tom, thank you for the introduction.

Our presentation today is in support of our request for renewal of the five-year Darlington operating licence. We have filed a written submission to the Commission.

With me today is Mr. Ian Azevito. He is our Regulatory Affairs Manager at Darlington. We also have some of our management team here with us today.

We have reviewed the CNSC staff’s CMD and the recommendation for another five-year licence term. OPG supports the staff’s recommendation.

We note that the licence as proposed contains some new conditions which have potential to impact station operation and for which OPG has not had time to adequately assess them.

In today's presentation, we will briefly highlight to the Commission the performance we have achieved in each safety area as shown on this slide.

As you will note, we have met or exceeded requirements and will describe the actions being taken for continuous improvement. We have built a strong safety culture at Darlington.

Darlington was granted a five-year licence in 2003. We have operated safely over this period. Our ratings and safety areas have steadily improved in the CNSC staff annual reports. We have operated in conformance to the regulatory requirements and we are in good standing with respect to payments of licence fees.

The operational impacts of the station on the public are well understood and we have environmental monitoring systems that provide information on a routine basis.

Our management systems and compliance programs continue to mature as we learn from experience.

We value assessments by our international industry peers and were recognized in 2007 with the best

ever evaluation by the World Association of Nuclear Operators.

Community relations is an active, ongoing program at Darlington. Supplementing the public information centre are quarterly newsletters which provide a summary of the station's performance. New residents to the Clarington area are informed about our station's operation and the public waterfront trail via the community Welcome Wagon.

Local officials and Council receive our quarterly report cards, updates and presentations. OPG is engaged in informing the public around the current interest areas.

Public and employee safety are important to all our decisions and actions at Darlington. Public dose has been well below the target value of 7.5 microsieverts over the current licence period. There was no serious process failure or near-misses.

Conventional health and safety performance has improved in 2007 relative to 2006 with no lost-time accidents to date and over three million hours worked without a lost-time accident.

Improvements have been made in the implementation of the radiation protection program and, as a consequence, employee radiological doses have been below

the regulatory limits and action levels over the last three years.

Operating performance is measured by a variety of indicators. Darlington's improved force loss rate is an indication of high station reliability. It's currently at .53 percent. Our chemistry performance indicators show good control over critical station chemistry parameters.

We routinely complete planned outages on time and meet the radiation dose targets set for those outages. We benchmark in the national and international industry forums on overall outage performance improvements.

In 2003 we had in the order of 30 event-free day resets and each year we reduce that number, expecting to better the 2007 target of eight by year-end.

Another indication of positive station reliability is a steady improvement in the plant condition index, which is a measure of system health.

Following a planned outage in 2006, during which some discovery issues were identified, the tritium removal facility was returned to normal production. We are working on corrective actions related to some recent human performance events within the TRF.

Our quality assurance program is

incorporated under the CNL Expectations Charter. This encompasses all aspects of operations and maintenance.

OPG maintains an assessment program under a division called “Performance Improvement and Nuclear Oversight”. The Expectations Charter and the independent assessment program have undergone CNSC evaluations and deficiencies identified in these evaluations have been corrected.

In the area of human performance we have strengthened our governance by issuance of a standard based on the Institute of Nuclear Power Operations Human Performance Leadership Framework. Human performance improvements have resulted in significant performance gains in all aspects of operation.

As noted in an earlier slide, there have been a three-fold improvement in our station event reset metric. Human performance is given a key profile in our Navigator business plan.

Our corrective action program relies on the station condition record process to provide a consistent and effective process for identifying, evaluating, and correcting adverse conditions. We use a CAP Health Index to track performance and they are tracked monthly.

The Corrective Action Review Board meets biweekly to review the CAP Health Index. This index has

shown considerable improvement through the 2006/2007 period.

Our OPEX, or operating experience process, values the experience shared by external sources and we utilize this in many facets of our work; for example, pre-job briefs and operational decision making.

Our training and qualification program meets the CNSC requirements. We are on track to meet our commitment on the number of certified operators in the control room by July 2009. The training of new certified staff and the re-qualification of existing certified staff has progressed well. We have made improvements to the mechanical and control maintenance training programs and are re-assessing the programs in the civil maintenance area.

We have launched a training program for new engineering graduate employees in order to provide them with a solid work foundation.

With respect to design and analysis, a risk-based engineering change control process was introduced in 2005. For regulatory requirements, safety analysis updates were submitted. Also, OPG had initiated actions to update the safety analysis with modern computer codes and methods.

We have completed and submitted to the CNSC

an enhanced neutron over power, NOP analysis that takes into account heat transport system aging.

Operational safety requirements documents in support of the safe operating envelope program are established and continue to be enhanced.

We have made improvements to the operational probabilistic risk assessment process.

With respect to equipment maintenance, we have made significant improvement in reduction of maintenance backlogs. Our on-line elective maintenance backlog has been reduced from over 1000 work orders per unit in 2004, to nearly 400 work orders per unit in 2007.

Our on-line corrective maintenance backlog has been reduced from over 20 work orders per unit in 2004 to less than 15 work orders per unit in 2007.

We have also initiated a focused leak management program that has resulted in a 50 percent reduction in the number of minor leaks since 2006.

A comprehensive periodic inspection program has been implemented to ensure the integrity of pressure boundary and fitness for service of plant systems and components.

Since 2002, we have conducted full-length inspections of selected pressure tubes across all four reactors. As per the requirements of the CSA standard, a

fuel channel was removed for inspection in 2005.

Darlington is proactively replacing feeders that are approaching end of life. With respect to steam generators, we have performed eddy current inspections on all units and have installed anti-vibration bars to mitigate tube fretting.

In the area of equipment qualification, we are currently on track to address Darlington's only C-rating which is specific to implementation of the EQ Program.

Equipment replacements identified through the project are currently on track and on schedule to meet the committed date of December 31st, 2010.

We continue to provide periodic updates to the CNSC on progress towards the completion of this commitment. An ongoing effort is the preparation of the EQ list development packages that will provide linkage to the design basis.

Fire protection systems and fire rescue equipment have undergone significant upgrades. We establish and maintain a comprehensive maintenance program on fire protection equipment to be compliant with the National Fire Code of Canada.

Halon-base compounds in fixed and portable systems have been replaced with non-ozone depleting

substances. We have also removed a significant number of temporary structures from the powerhouse.

For emergency preparedness, we have conducted a successful drill and exercise program at Darlington. We learn from each drill and upgrade our instructions and procedures. We measure performance in this area by using the CNSC approved indicators and routinely report them. These indicators have range from 97 to 100 percent from 2003 to the end of June 2007.

No major issues have been identified by the CNSC type one inspections related to the program and its implementation and we have consistently received A ratings in the CNSC annual industry reports during the 2003 to 2006 periods.

In the area on environmental performance, Darlington has not approached a derived release limit for any radionuclide or radionuclide group during the current licence period.

In order to prevent corrosion of the boiler feedwater systems, Darlington uses ammonia and hydrogen. We have met the regulatory requirements on releases of these substances set by the Ontario Minister of Environment, the MOE. All planned discharges are reported to the MOE.

Darlington has an excellent safety record

with respect to minimized spills to the environment. There are no reportable spills classified as category A, B, or C in 2006 and 2007. Since 2005, in response to the requirements of Bill 133, we also report spills that have no adverse impact on the environment. We continue to successfully maintain the ISO 1401 certification for our environmental management program.

Our radiological protection program implementation has improved significantly as recognized by the CNSC with an A rating.

Over the past three years no worker doses have exceeded the regulatory limit or action level. This is largely due to effective implementation of the exposure control program.

Benchmarking against other CANDU stations shows that Darlington’s collective dose performance has been consistently better than the median. Improvements to the heat transport purification system, such as optimization of flow rates and the reduction of filter pore size has led to reduction and the radiation source term.

We have also reduced advance of unplanned exposures and unplanned hazards in the station. We have successfully applied the ALARA principle to manage radiation exposures during major planned outage projects,

such as boiler primary side inspections and feeder inspections and replacements.

With respect to safeguards, Darlington has met the licence conditions. We perform to the terms of the Canada IAEA Agreement on the non-proliferation treaty. Darlington has reviewed and adjusted its procedures to meet the requirements of the IAEA additional protocol. Darlington staff cooperate with the IAEA staff in the installation of new surveillance equipment. We routinely submitted the inventory reports, as required by regulations.

The annual physical inventory as conducted by the IAEA have shown Darlington to be in compliance with no discrepancies observed.

Madam Chair and Commissioners, we respectfully state that OPG has demonstrated it is qualified to operate Darlington NGS and OPG continues to make the necessary provisions to meet the requirements of the *Nuclear Safety and Control Act*.

In the next five years Darlington will be building on this success and we will continue to focus on improving material condition, the reliability of its operating units, meeting its commitments and on a strong safety performance.

Thank you.

THE CHAIRPERSON: Thank you.

I am now going to move to the presentation by CNSC staff, as outlined in CMDs 07-H20, 07-H20.B and I'm going to turn it over to the new Director General in charge of this area, Mr. Tom Viglasky. The floor is yours, sir.

07-H20 / 07-H20.B
Oral presentation by
CNSC Staff

MR. VIGLASKY: Thank you very much. Good afternoon, Madam President and Members of the Commission.

For the record, I'm Tom Viglasky, Director General of the Directorate of Power Reactor Regulation.

Today we are going to present CMD 07-H20 to the Commission for its decision concerning Ontario Power Generation's application for the renewal of the Darlington Nuclear Generating Station Operating Licence.

The current licence for Darlington will expire on February 29, 2008.

I will now turn over the presentation to Mr. Garry Schwarz, Director of the Darlington Regulatory Program Division.

Thank you.

MR. SCHWARZ: Good afternoon, Madam President, Members of the Commission.

For the record, my name is Garry Schwarz. I am the Director of the Darlington Regulatory Program Division at the CNSC.

Present with me today are representatives of all of the CNSC divisions that contributed to the CMD, and have responsibility for some aspects of regulatory oversight of the station.

This presentation gives a brief summary of the staff's review of the licensee's renewal application and of the staff's view of the safety performance of the Darlington Nuclear Generating Station over the current licence period.

We will also present staff's overall recommendations and conclusions. As well, information on proposed changes to the Darlington Power Reactor Operating License will be presented.

On March 29th, 2007 Ontario Power Generation applied to the Commission to have its Nuclear Power Reactor Operating Licence for the Darlington Nuclear Generating Station renewed for a period of five years until February 28th, 2013. CNSC staff has reviewed the application and associated follow-up correspondence and concludes that the application contains all of the

information prescribed by the General Nuclear Safety and Control Regulations and the Class 1 Nuclear Facility Regulations.

It also contains additional information requested by CNSC staff on operating plans including safety improvement plans for the proposed licensing period. CNSC staff considers that OPG has operated the Darlington Nuclear Generating Station safely during the current licensing period. There have been no serious process failures. The availability of special safety systems met CNSC requirements and doses to workers and releases of nuclear and hazardous substances from station operation were well below regulatory limits. Risk to the public and to workers has been kept low and in staff's view is likely to remain low over the recommended licensing period.

CNSC staff rates OPG's overall performance at the Darlington Nuclear Generating Station as "B", meets requirements. This position was arrived at after considering each of the nine safety areas and the importance of the associated programs to overall performance. The next slide shows the ratings for each of these safety areas excluding nuclear security, as it is protected information, as well as their sub-element ratings.

As previously stated, there are nine safety areas that cover station performance; note that the nuclear security safety area ratings are not shown as this is protected information. All safety areas shown here are rated at “B” or higher for both the programs and the implementation of the programs.

First, I will discuss the safety areas that have exceeded our expectations. The two safety areas that continue to receive “A” ratings from staff are radiation protection and emergency preparedness. Although the Radiation Protection Program rating dropped from “A” to “B” due to the need for some improvements, implementation continues to receive an “A” rating based on findings of best industry practices in some areas, and a pro-active approach to radiation protection in general.

The emergency preparedness safety area continues to receive “A” ratings for both the program and its implementation, as the licensee has consistently met the expectations for the criteria from the CNSC regulatory guide G-225 and in some cases exceeded expectations. The first four safety areas each contain several sub-elements which are shown in the next few slides.

Over the licensing period the performance assurance safety area sub-elements; quality management, human factors and training, examination and certification,

have all improved from a “C” rating in implementation to the current “B” ratings. These improvements have been communicated to the Commission through the annual CNSC staff report on the safety performance of the Canadian nuclear industry.

Now, trending in the safety analysis sub-element of the design and safety analysis safety area has been deteriorating. The reason behind this trend will be discussed in more detail later on in this presentation. Equipment qualification, which is a sub-element of the equipment fitness for service safety area, continues to be rated at “C”. This is due to the lack of full implementation of the requirements necessary to demonstrate that equipment required to operate under extreme environmental conditions resulting from design-basis accidents is qualified. However, the licensee is making good progress in resolving the issue and the trend is considered to be improving.

More information is presented under the next slide.

In summary, CNSC staff is pleased with Darlington’s safety performance, but there are some safety issues that we wish to bring to your attention, and these are discussed under the next slides.

Now, as indicated in the previous slide the

qualification of equipment for harsh environment conditions, also referred to as the environmental qualification of equipment, continues to be an issue at Darlington. A large volume of work has already been done, but given that most of the work must be done during planned outages, OPG's target date for completion of all activities is December 31, 2010.

CNSC staff concludes that the licensee has made considerable progress in identifying and resolving some of the outstanding issues, but the implementation and sustaining aspects of the program are still evolving and have not yet met requirements.

As mentioned previously, the safety analysis sub-element of the design and analysis safety area has been given a "deteriorating" indicator. The following are the main issues contributing to this indicator: Update of the safety report accident analysis, large loss of coolant accident safety margins and impact of plant aging on the safety analysis.

Since the initial safety analysis was performed on Darlington the standards for the conduct of analysis have undergone significant development. A re-examination of the safety analysis early this year by CNSC staff against current criteria revealed a number of shortcomings with these analyses, such as the use of

computational tools which have not been validated.

CNSC staff concluded that although the current safety case for Darlington is not in question at this time, due to the conservatisms used in a number of parameters such as fuel bundle power and reactor channel power limits, the existing safety margins and analysis results need to be confirmed. CNSC staff has written to the licensee on the issue and held several meetings with the objective of reaching agreement on timelines and milestones for this work, which would achieve confirmation within a reasonable time frame. It is CNSC staff's objective to have a schedule and milestones established by the end of this year.

The original safety analysis in support of the initial operating license for the plant had a certain level of conservatism built in to the performance of these analyses. Now, since then, a number of discoveries have resulted in a significant decrease in the safety margins for the large loss-of-coolant accident analysis. In response, OPG has initiated the Large Break LOCA Margin Restoration Program. Although OPG believes that the existing margins remain adequate for continued safe operation, OPG recognizes that not much margin remains to accommodate any further adverse discovery issues. OPG is confident that these margins could be significantly

increased through improvements to safety analysis methodologies and code validations, as well as through the use of risk-informed decision-making.

CNSC staff also believes that current operation is safe but remains concerned that further erosion of the safety margins could arise from consideration of effects such as the impact of plant aging. In CNSC staff's opinion, the safety margins need to be improved in a timely manner.

Many activities have been undertaken by OPG since the margin restoration program began. In response to a request by CNSC staff, OPG has committed to provide a detailed update for all activities of the margin restoration project by the end of this year. CNSC staff proposes to report back to the Commission on progress on this issue through the annual CNSC staff report for 2007, on the safety performance of the Canadian nuclear power industry.

Darlington is the youngest member of the operating CANDU reactor family in Canada. However, it too is now suffering from the effects of aging of plant components. The extent of aging is such that it could now impact the effectiveness of the special safety systems; in particular the shutdown systems, to cope with certain design-basis events.

To evaluate the impact of aging on the neutron overpower protection trips of the shutdown systems, OPG and Bruce Power have developed a new analysis methodology. This has been used to assess the impact of aging on the Darlington neutron overpower trip coverage. According to this analysis, the safety margin is such that current installed trip set points will remain effective for several years. CNSC staff will be conducting a comprehensive review of this new neutron overpower analysis methodology which will include among other things, an assessment of how the impact of aging on the heat transport system is being addressed.

Recently, a CNSC staff screening review report has been completed and sent to OPG for comment. The review, whose main focus was certain probabilistic aspects of the new methodology, identified a number of issues that require further examination and information. In order to better understand the basis of the calculated safety margins, and to determine the extent to which it can be credited, CNSC staff has requested OPG to provide additional information on the new analysis by the end of November of this year. Looking ahead, there are a number of significant activities expected over the proposed licensing period of five years. Some examples are vacuum building outage in 2009 to facilitate its inspection and

testing. The last such outage was held in 1997.

Under aging management, reactor feeder replacements is necessary to ensure that feeder thinning does not lead to premature end of life for reactor units, and moving unit outages to a three-year interval to optimize maintenance activities. Looking beyond 2013 refurbishment of units is currently predicted to start in 2018.

Application has been received from OPG for a site preparation licence for new reactors on the Darlington site.

And now to summarize CNSC staff conclusions:

OPG’s application for renewal of the Darlington power reactor operating licence meets the requirements of the *Nuclear Safety and Control Act* and its regulations. In light of its performance during the current licensing period, as well as the acceptability of its programs and planned improvement activities during the proposed licensing period, CNSC staff concludes that OPG is qualified to operate the Darlington Nuclear Generating Station and will make adequate provision for the protection of the environment, the health and safety of persons, and the maintenance of national security and measures required to implement international obligations

to which Canada has agreed.

CNSC staff recommends that the Commission renew, pursuant to section 24 of the *Nuclear Safety and Control Act* the Power Reactor Operating Licence 13.00/2013 to Ontario Power Generation for the Darlington Nuclear Generating Station for a period of five years until February 28th, 2013.

This five-year licensing period meets the criteria as defined in CMD 02-M12.

Now, I would like to talk about the proposed licence for Darlington.

The initial proposed licence was attached to CMD 07-H20. Subsequently, additional refinements have been made to the licence to clarify certain regulatory oversight provisions. These are contained in the updated licence attached to CMD 07-H20.B. Also provided in CMD H20.B is information on the rationale, regulatory benefits, and administrative processes pertaining to the new licence conditions.

CNSC staff is of the view that the power reactor operating licences need to be reformed to clarify and solidify requirements, reduce redundancy, achieve consistency, and improve regulatory oversight and verification.

CNSC staff is using the renewal of the

Darlington operating licence to introduce these changes. The proposed changes are also in line with the Commission's strategic direction to adopt international practice. Some of the proposed changes also provide assurance that the management and operation of the facility will be in accordance with the licensee's application for licence renewal.

It is through this application that the licensee demonstrates to the Commission that it meets section 24(4)(a) and (b) of the *Nuclear Safety and Control Act*; namely, that the licensee a) is qualified to carry on the activity that the licence will authorize and; b) will in carrying on that activity make adequate provision for the protection of the environment, the health and safety of persons, and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

Since the application is the basis supporting the licence issued by the Commission, it is important that this basis be maintained throughout the life of the licence.

The changes proposed to the licence can be summarized under the three categories given on this slide.

The first category refers to previous wording and practices which suggested that power reactor

operator licences could be amended by designated officers. Such amendment practices are not in compliance with the *Nuclear Safety and Control Act* and have been removed.

The second category refers to specific licence clauses which have been amended to clarify CNSC requirements. For example, changes to some documents referenced in the current licence do not require the approval of the Commission. This led to confusion and has been clarified in the new licence by removal of any such documents so that any changes to any of the appendices now require the approval of the Commission.

The third category refers to controls on licensing documents to improve regulatory oversight and risk informed regulation. The next slide contains examples in these categories.

Condition 1.2: OPG’s licence renewal application refers to OPG’s nuclear charter which in conjunction with the reference documents under the governing document framework of the charter establishes OPG’s overall quality program that governs the operation of its facilities. These documents ensure among other things that activities affecting safety-related systems, structures, and components are performed in accordance with applicable regulations and standards and are planned and controlled to maintain plant configuration within the

design basis for the plant.

The Commission licenses OPG's facilities on the basis that they will be managed and operated in accordance with the documents in this framework. These are primarily program documents. To ensure that this remains valid for the period of the licence, condition 1.2 has been added so that the CNSC will be given notification of any changes to these documents prior to implementation. This allows time for CNSC intervention if it appears that a change may result in a deviation from the original application to the extent that the basis on which the licence was issued is no longer valid.

Condition 2.1: OPG's licence renewal application includes a detailed organizational structure, role documents for senior management positions and staffing levels for Darlington Nuclear Generating Station. This information demonstrates compliance with the general regulations, section 3(1)(k) and 12(1)(a), whose purpose is to establish that the licensee has the organization and staff necessary to operate the facility safely. This is a key element of the licensing basis for the plant and therefore the CNSC must perform sufficient regulatory oversight to give reasonable assurance that this aspect of the licensing basis is being maintained.

CNSC staff believes that notification prior

to implementation of major organizational changes, prior notification of changes to the role documents for the more senior management positions, and an annual compilation of other organizational changes carried out throughout the year including an update of the detailed organizational structure will be sufficient to accomplish this. This will allow the removal of specific management role documents listed in Appendix B in the current licence which will simplify administration of this aspect of the licence.

And condition 3.4: Part A of condition 3.4 requires the Licensee to obtain CNSC approval prior to restarting a reactor following an event which cannot be discounted as a serious process failure; an event which in the absence of shutdown system action could result in systematic fuel failures. Such events are infrequent but serious in nature because safety system intervention is required to ensure reactor protection and public safety. It is important that such events are properly analysed and the causes understood and satisfactorily addressed before the reactor is restarted.

To provide regulatory oversight commensurate with the risk significance of such events, Part A has been added which requires CNSA approval to restart the reactor following such an occurrence.

Part B of this condition 3.4 addresses regularly planned outages involving significant inspection and repairs to; one, confirm the status of systems important to safety; two, carryout such repairs as necessary to restore the reactor to a state which permits it to be operated safely for another operating cycle.

It is important to ensure that licensee undertakings of regulatory requirements are carried out and that these outages have adequate scope to ensure the continued safe operation of the reactor.

To provide regulatory certainty regarding these activities, Part B has been added which requires CNSC approval to restart following regularly planned outages.

In conclusion, CNSC staff feels that these proposed changes will enhance the transparency, predictability and clarity of the application of the licence while maintaining adequate regulatory oversight of licensed activities within the mandate of the CNSC.

Several licence conditions contain approval of the Commission or a person authorized by the Commission. CMD 07-H20.B gives recommendations on the CNSC staff positions to be authorized by the Commission. These are consistent with the positions listed in CMD 00-M18 and as reflected by the current CNSC organizational

structure.

Consultations are continuing with the licensee regarding the proposed licence. We expect some changes to be made to bring further clarity to the licence conditions, and these will be presented to the Commission for Day Two.

And this concludes CNSC's staff presentation. I now turn the microphone back to Mr. Viglasky.

MR. VIGLASKY: Thank you.

Madam Chair, that concludes our presentation. Staff is available to clarify any issues and to answer any Commission questions.

Thank you.

THE CHAIRPERSON: Thank you.

The first question that I am going to ask Mr. Robbins is five years ago when this licence was given you weren't the person in charge of this facility. And so it's important for the Commission to understand as the person who has the responsibility for the facility, what is your vision of the safety culture that you wish to have in this facility?

MR. ROBBINS: Wayne Robbins, for the record.

We value a very strong safety culture at

Darlington. In fact, we have several programs in place to enhance our safety culture. We have evidence of a very strong safety culture at Darlington. We've had a safety culture survey. We have people routinely report station condition records. They self report. We have management oversight in the field, and our program is set in place to build on that and enhance that over the next five years.

We are a very strong advocate of management presence in the field to interact with our staff, to understand our staff's concerns and really build on that success.

THE CHAIRPERSON: So could I understand the word "I" is there with the "we"?

MR. ROBBINS: Wayne Robbins.

That is correct. I am personally involved in this. I'm in the field myself just about every day.

I interact a lot with the staff.

THE CHAIRPERSON: Thank you. We'll start with the questions from Commission Members. I will turn to Dr. Barnes.

MR. BARNES: Thank you, Madam Chair.

Just so I understand the process here, and I would like to ask staff. You introduced the supplementary information in CMD 07-H20.B, which includes a lot of the information on the new licence conditions and

you've just gone through a selection of these.

Why were they not included in your initial document 07-H20?

MR. VIGLASKY: Tom Viglasky, for the record.

The initial licence was prepared, let's say, without adequate consultation with OPG on how we were going to implement the new licence conditions and to explain some of the regulatory certainty that OPG was requesting that we clarify for them. As we had those discussions over the last three, four weeks, we have looked at how we could amend the licence conditions to provide that clarity and regulatory certainty.

MR. BARNES: I accept that as a response. But I'm not clear why that would be the case, since this is a five-year licence and therefore there was lots of, in essence, notice for the required preparation of these documents.

Normally, some of the supplementary submissions that we get include, you know, a little bit of fine-tuning; in this case, it seems to me, significant supplementary information covering a whole lot of licence conditions. So could you explain why staff did not have that dialogue with OPG or vice versa much more in advance?

In a sense, you are bringing this to the

Commission today for a five-year licence. I recognize it's still Day One of a two-day meeting, but the licence conditions are essentially a very important part, obviously, of the document. I don't understand why the process would not have been more complete such that you would have had this explanation in your first document 07-H20.

MR. VIGLASKY: I agree with your criticism, and I accept the criticism.

We believe that it was opportune for us to make these changes to the Darlington licence at this time. To delay making these changes until later would virtually skip a five-year period for the Darlington licence, and we thought it was more opportune to go in at this time and make the necessary changes in the last -- over the last three weeks and between now and Day Two.

MR. BARNES: Two other follow-up questions on this point: You have given a number of examples in your formal presentation here.

Could I ask if the ones that were used as examples were the most significant ones or just a representative set or how did you choose those particular four or five examples compared to quite a lot in the document?

MR. VIGLASKY: Garry, can you take that,

please?

MR. SCHWARZ: Garry Schwarz for the record.

Yes, the ones that we put in the supplementary CMD were what we consider to be the most significant ones and the most contentious, if you want to put that way.

MR. BARNES: And so if I turn to OPG, the document that we are referring to, which is H20.B, has a date on it or at least a signature date of the 25th of October. Could I ask when it was that you received this document?

The date on the first page is the 1st of November, which of course is today, unless it's the day that it's being heard, but when did you receive this information?

MR. ROBBINS: Wayne Robbins for the record.

It was shortly after that, of the 25th that we got notice of this information.

MR. BARNES: And so your point is that you have not had adequate time to review these? Could you put that in the context of the dialogue that Mr. Viglasky has been mentioning of a dialogue over three or four weeks?

Were these licence conditions significantly new and a surprise to you, or could you see these developing over the dialogue over the last month or so and

why has it -- could you explain why the intervening time since about the 25th, 26th or whenever has not been enough for you to respond today in Day One?

MR. ROBBINS: Wayne Robbins, for the record.

We understand that CNSC has authority to introduce new licence conditions. We also understand CNSC is driving towards international practices. We expected some new conditions such as S-98 and S-210 but the other conditions in the licence were a surprise to us; things like the control over program documents. Organization and the approval of a restart were unexpected.

Our ability to comply with the new legal requirements is determined by the clarity of the new requirements. And when the licence -- the new licence is issued March 28th, we have to abide by that. We were consulted very late and the changes to some of the licence conditions appear not to be finalized. The rationale and the need for these conditions at Darlington still remain unclear.

We are concerned that there is a lack of clarity of process through the CNSC with the use of -- especially the given -- the restart process. Restarting a reactor is a very complicated process.

The formal notifications of our program

documents and the organizational changes -- that will increase the transactions between OPG and the CNSC.

We take compliance very seriously, and the clarity requirements is a cornerstone of implementation and such requirements will take more investigation by us to understand them.

MR. BARNES: Day Two is on January the 10th and part of the role and responsibilities of the Commission on Day One is to identify with the licensee and with staff what are the issues that need to be brought forward on Day Two and make that evident for the potential intervenors here.

So would you anticipate that there was sufficient time to have appropriate dialogue with staff so that you would present to the Commission on January the 10th your more detailed comments, or that you think you would have arrived at some understanding with staff, some acceptability or definite unacceptability of some of these licences? Is there enough time in the sort of two months there?

DR. ROBBINS: Wayne Robbins for the record.

The conditions are substantial, the changes. I'm not certain about the timeframe. We will certainly work with the CNSC staff as much as we can in that period, but to fully understand how we would

implement these substantial changes, it may be a challenge in that period of time.

MEMBER BARNES: I notice that you made reference to staff trying to achieve international standards, but you also use that in your own presentation with a WANO reference, so I presume this would not necessarily be a surprise to you -- staff's view on that.

DR. ROBBINS: Wayne Robbins for the record.

We do work a lot –- we work through WANO to get a lot of our benchmarking and operating experience in the industry. They're our connection around the world. Not all these conditions are uniform throughout the world.

MEMBER BARNES: You've addressed, if a little obliquely, the fact that Darlington, although the youngest, is now beginning to age somewhat, and that's referred to in a number of the specific sections, but before I get into, say, one or two of those, could you give me an idea of when you would anticipate the Darlington Nuclear Plant going through the kind of refurbishment that Point Lepreau is going through for example? How far along are you before you reach that kind of major refurbishment?

DR. ROBBINS: For the record, Wayne Robbins.

Our estimate right now with the status of

the equipment and our engineering assessments, it's 2018. So it's past the licence period.

MEMBER BARNES: Nevertheless, a decade, which gives you an opportunity to plan and so in the context of President Keene's comment to you as someone relatively new in the position and knowing the kind of situation that's been developed at Point Lepreau where some of the need to refurbish came about because of significant failures in the feeder pipes and so on, how would you see restructuring the organization or the testing within Darlington to give, in a sense, a decade of closer analysis, and re-profiling your staff resources to make sure that the refurbishment is done in a timely manner and a most efficient manner, and getting working with staff in this regard?

DR. ROBBINS: Wayne Robbins for the record.

We have an integrated aging management program. We've actually started looking at that now. We have a stratum for managing the loop, and looking at especially heat transport system aging.

We are tracking the industry. We are observing it very closely with utilities like Point Lepreau. We are doing feeder pipe inspection programs, we do them every outage. In fact, the current outage we're in, we're doing feeder pipe inspections on thickness. We

also do pressure tube inspections and extensive boiler inspections. We will be starting a plant condition assessment program next year as a prereq to look at our refurbishing decisions.

MEMBER BARNES: I was trying to find out a little bit more information on that, for example, on the reactor feeder thinning issues which you describe on page 69 of 151 of your report, and staff on their page 7 3.4.2.3 on feeder pipe aging management. So you did indicate the kind of process, but you didn't indicate in a sense the degree of thinning that you've been observing. Could you quantify how much thinning has actually been observed?

DR. ROBBINS: I'll turn it over to Craig Sellers to answer that -- thinning mechanisms that we've seen in the plant? Wayne Robbins.

MR. SELLERS: For the record, Craig Sellers.

We've seen thinning at elbows. We've seen thinning around the Grayloc weld region and we -- historically we've looked at about 100 micrometers per year. We do have online thickness monitoring on some of the Grayloc locations. They're coming in at approximately 40 to 60 micrometres per year. Every outage, we go in and we look at the feeder thickness measurements. We

determine whether we have adequacy for the next operating interval; we are on a three-year operating interval between outages at Darlington. If we can't meet that operating interval, we either replace the feeder or do stress analysis on all those particular locations.

MEMBER BARNES: I think you gave that in the rate of loss per year, but in terms of the percent of the wall thickness that's gone, could you express it in that value, approximately?

MR. SELLERS: Craig Sellers for the record.

All feeder measurements that we take currently today and in outage periods, all are above pressure boundary minimum thickness and will be above pressure boundary minimum thickness for the operating interval.

MEMBER BARNES: Thank you.

THE CHAIRPERSON: I'd just like to clarify a bit of this discussion on licences. It's the Commission who decides what the licence will be. It's not going to be based on any kind of group-think or a consensus between the staff and OPG, so it would be wrong to leave the impression -- and certainly I don't think intervenors would be very happy to think that that's how it works.

The Commission will decide what's in the licence and so I think it's going to be incumbent upon OPG

and the staff to discuss the issues. It is the staff who recommends to the Commission what the licence looks like -- it's not a joint recommendation, and that if there are areas where there is a difference, I think we'll want to have that pointed out to us clearly before Day Two; it's not an option for Day Two. So we will have those discussions and then the Commission will decide itself on what basis it will make the recommendation.

The Commission understands very clearly that what is done in this licence has implications broadly. We understand that, and so we will accept interventions from other operators if they wish to make a comment on that because we think it's a major change.

We would like to make it clear it's not just the staff who believe in international standards. In the minutes of the last meeting of the Commission where we discussed the approach of the Commission to regulatory standards, the Commission, I think, made it clear in our record of decision from that meeting that the Commission accepts that this an international industry where international safety is of great importance. So, therefore, it's not the staff who have made this clear, it is the Commission who's made it clear as to how we have to, where appropriate and where possible -- and in fact it's the Government of Canada who has said that under the

regulatory streamlining exercise that all regulatory agencies of the Government of Canada must pay attention to international standards when it's setting regulatory requirements.

So I just thought there was some clarity necessary in putting this forward.

May I turn to Mr. Graham?

MEMBER GRAHAM: Thank you, Madam Chair.

Some of those discussions have been covered by Dr. Barnes, but two questions I have to start off with, and first is the -- and the CNSC staff, you're recommending a five-year licence. If I recall, I think the mid-term last time was incorporated into annual reports and so on. How do you propose, or how do you -- when are you proposing to address mid-term or near mid-term review in this licence process?

MR. SCHWARZ: Gary Schwarz for the record.

I would suggest -- respectfully suggest that the issue of the mid-term is really up to the Commission, but we normally will put into the -- it is our intention to include in the annual reviews, any information pertaining to any commitments or any actions that have resulted from the Commission meetings.

For example, in the one case, we stated that we would update the Commission through the annual

reviews on a particular analysis issue and we will of course be doing that. So we will certainly undertake to update the Commission on anything that is identified here as going forward, through the annual industry reports.

MEMBER GRAHAM: Thank you.

Another question I have, Madam Chair, with regard -- and this is directed to OPG -- a recent press article or press article sometime back, I guess it was last spring in which -- I was reviewing it, in which one of the VPs of OPG suggested that OPG was facing a major worker crunch.

And I would like to know, first of all, roughly, what is the average age of workers at Darlington and, also, is this something that we should be concerned about over the next five-year licence or the term of the next year's -- next licensing period?

MR. ROBBINS: Wayne Robbins, for the record.

Demographics is a serious issue that we are concerned about at OPG. Mr. Graham, for the age, I can't give you the specific age, but I believe it's around 47 or 48 years of age.

But we do have a very aggressive apprenticeship program right now. We're hiring a lot of young staff in to fill our maintenance trades, especially

control, mechanical and civil, as well as we have a very aggressive operator training program to get them in to learn the skills. Knowledge, retention and transfer are a big concern to us and we put a lot of focus in that.

As you saw in my presentation, we're also hiring engineering staff. We're getting engineering staff through the door to get them up to speed on the knowledge of -- especially in their trade of knowledge retention. So demographics is a huge issue for us and we are concerned about it, but we are planning for it.

MEMBER GRAHAM: You don't -- in other words, what you're saying is for this licensing period coming, you don't foresee any major problem at having sufficient staff to operate the plant in a safety way or at the levels that are required by CNSC?

MR. ROBBINS: Wayne Robbins, for the record.

I do not see a problem in the next five years of staffing to safely operate our plant. Safe operation is paramount to us and we will maintain that.

MEMBER GRAHAM: Does CNSC staff have any comments with regard to aging of staff or demographics or with regard to the retention of workers within this licensing period for this licensee? Have you flagged any concerns with regard to this?

MR. SCHWARZ: Garry Schwarz, for the record.

We have indeed looked at the same issue and we have determined, after our review of the different programs that the licensee has in place to address this particular issue, that the licensee is adequately addressing the issue and there should be no problem over the next licensing period with respect to having properly and qualified staff -- adequate, qualified staff available to operate the facility.

MEMBER GRAHAM: Thank you.

In CMD H-20, which was prepared by CNSC staff, starting on page 33, under 3.3.1 Safety Analysis, this is trending downward and comments by CNSC staff, I believe -- and it goes on, the very last paragraph in which:

> "Long-term safety operation of DNGS are generally not fully developed."

My question -- and there are about five issues -- about five instances from page 34 to page 48 in which there are negative observations. And my question to OPG would be will you be reporting on these comments in a more detailed manner on Day Two? And I would start with the 3.3.1 which is the Safety Analysis, and then the next one, of course, is 3.3.1.1, which is Shutdown System's

Effectiveness, and so on. There are -- I can outline the five that I'm referring to, but they carry on from page 34 to 48 and they focus in on the need for resolve.

So to OPG.

MR. ROBBINS: Wayne Robbins for the record.

Yes, we will be addressing the issues. I just want to reassure that Darlington is safe. We have a sound safety analysis. We are following the safety report updates. We are in discussions with CNSC staff on things like a transport system, aging, and new analysis as it arises, and we are following the international operating experience. So we will address these issues as we go forward.

MEMBER GRAHAM: Thank you.

And as I say, there were five different issues. A third one was on 3.3.1.4, Safety Report Update, and it says:

> "CNSC staff conclude that the above criteria which was listed just above on that have not been met for the majority of the safety analysis."

So that again is another one that I would like further -- we would like further specifics on on Day Two. And we've heard from OPG. Has CNSC staff anything further to comment on those four or five issues that I'm

referring to on those pages that I referred to?

MR. VIGLASKY: I would like Dave Newland to respond to this. Thank you.

MR. NEWLAND: For the record, Dave Newland.

I would first just like to reiterate comments made by Mr. Schwarz that we're not questioning the safety case of Darlington at this point. We gave it a B rating because we think it's B-rated.

However, we've noticed throughout various programs such as the Safety Analysis Report, Update Program, the fact that there are a number of outstanding safety issues that have been outstanding for a number of years, and although good progress is being made, they're not coming to -- they're not coming to conclusion. So that is really why we trended it downwards.

What we're looking for from OPG is for a clear plan of action, and we have requested that so that we can monitor it and we can see that those safety margins will be, if you like, respected and restored.

THE CHAIRPERSON: I just think that there's a point to be made here. When a licensee has an opportunity to look at the assessment of the staff and still comes back with a presentation that shows that everything is perfect and the staff don't feel that it's perfect, this, to me, is one sign of -- one reason why the

Commission would question the culture of an organization.

And so it’s extremely important, if there’s – if you have objective reasons to differ from a science point of view or with the analysis that the staff gives, it’s important for you to acknowledge that, but you’ve had ample opportunity to look at the work that the staff have put forward.

So this gap that the Commission is recognizing is important for OPG to address and to address in a way that -- to understand, in the view of the Commission, the standards to which you should be holding yourself, the regulatory standards are the basis upon which you would look at yourself. It’s not the top.

So if you look at yourself as being -- if you’re looking at yourself and you think that the regulatory standards are too high, and based on what has been put forward by the staff as being evidence and advice to the Commission, well, then you must understand that the Commission is sort of thinking to itself, “What’s going on here?”

So it’s important that the presentations that you give are objective, but if there are issues, well, then you address them proactively in looking at that, and I think in a way that’s what perhaps I could interpret part of the discussions being.

Do you have further questions at this time?

MEMBER GRAHAM: I just had one other question, because I know my colleagues have some also. And this is -- pertains to OPG's presentation.

I look at some of the graphs and trends and so on, and probably I could refer to the one on page 113 and 151, Personal Contamination Events. There seemed to be a trend upwards up to 2006. Granted, 2005 was down, but 59, 69, 80 and even 57 in 2007, and I looked at some of the other graphs, and up -- during the last licensing period there seemed to be quite a jump in around 2004-2005 in some of the graphs and then they've levelled off.

I wonder if you could care to comment what -- first of all, what happened in 2004-2005 and, also –- and then -- that's on graph on page 94 of 151.

But, all through the report, there seemed to be, in the first few years of that law -- the last licensing period, you seem to be having -- even though they were within guidelines, they were higher than what they've credited in the last year, and I'm wondering what happened there. Was there a different safety culture being practiced? Or -- what exactly happened?

Perhaps start with page 94-151, in which there was quite a jump on 2004-2005 and if you care to comment. And then the following page, 95; again, water

releases. One of the first is air; and then water. Oh-two (’02), ’03, ’04 seemed to be quite a large jump, in that last licensing period.

MR. ROBBINS: Wayne Robbins for the record.

I’m going to start with 94 and 95. Looking at things like the water releases, we do have graphs showing that we are trending down. The exact specifics for a spike, Mr. Graham -- I will have to get back to the staff on that. I do not have the information.

But when I look at things like the personal contamination events on 113, we’ve used Darlington’s culture to look at the outside -- to look at benchmarking. That’s how we learn; we observe; we get out in the field; we see what best events are and -- are we reporting? What’s our threshold?

So then we go from that, and we actually encourage observation and focus in on specific areas. In some areas, that has caused a spike in observations; a specific focus from benchmarking and industry practice. Then we put compactions in place. As you see, the trend will flatline or decrease, but generally it’s an indication of a focus.

MEMBER GRAHAM: You’ll have some further clarification on day two, with regard to the other graphs that I mentioned, you said?

MR. ROBBINS: Wayne Robbins for the record.

Mr. Graham, we can get further clarification for day two on specific graphs that you referenced on page 94 and 95, specifically.

THE CHAIRPERSON: Are there comments from the CNSC staff on this matter?

I'm sorry; the counsel has reminded me it's not getting back to staff, it's getting back to the Commission, okay? Could we make that clear?

And, if the staff have any comment at this time on the question, from Mr. Graham?

MR. VIGLASKY: No, we have no -- we have nothing further to add at this point.

THE CHAIRPERSON: May I turn to Dr. McDill?

MEMBER McDILL: Thank you. My first question is with respect to the safety analysis.

What is the intended procedure for dealing with the invalidated computational codes?

I'll ask OPG first.

MR. ROBBINS: Wayne Robbins for the record.

So your question is what -- how do we do with invalid computational codes?

MEMBER McDILL: The -- during the presentation, the comment with respect to safety analysis was that there was discrepancies caused by the use of

unvalidated computational codes.

MR. ROBBINS: For the record, Wayne Robbins.

I'd like to turn over to Mr. Craig Sellers to answer that question, please.

MR. SELLERS: For the record, Craig Sellers.

I think we have to understand that standards have been increased and, specifically, CSA Standard N286.7 has been introduced in 1999.

When the original licensing basis was submitted, we did not have that standard to adhere to. What we did do in the original licensing -- when we had computational codes, we would validate against commissioning data of the plant when it started up, to assure ourselves that that -– that the computational codes were, in fact, providing us with outputs that were, in fact, valid.

If you go to 286.7 it calls for a validation plan to be prepared by qualified staff. All our codes that have been developed since that time have been compliant with 286.7.

What staff is asking us to do is go back and look and revise, and review the codes that were used in the past and confirm that they are, in fact, valid. We

have got recent correspondence from the staff and we've made a commitment to respond to them by mid-December with an action plan in terms of the timing and the milestones.

MEMBER MCDILL: Thank you.

Does staff have any comment on that?

MR. VIGLASKY: Yes; if you recall, last month staff made a presentation to the Commission regarding the new regulatory documents, and one of those documents was RG-310 which was the standard for carrying out safety analysis. The Commission, after that meeting, approved the issuance of that document for implementation.

During the presentation that I made, we were -- we discussed how we're going to implement that document into the operation of ongoing nuclear power facilities, and Mr. Sellers' comments are very appropriate.

We are now in discussion -- trying to identify what areas of the safety analysis should be reviewed, to ensure that they are carried out with validated codes and meeting those new requirements.

MEMBER MCDILL: Thank you.

So that is also, then, what is referred to on page 37 in 3.3.1.4 with reference to RD-310; is that correct?

MEMBER MCDILL: Thank you; that takes care

of another question.

On page 20 of the same document, there's a reference to staff tampering with public address speakers; on page 25, there's a reference to bypassing a TSSA hold point during an inspection or a test. Those may be small, isolated issues, but do –- maybe I could ask OPG if they reflect something that's happening at the employee level, that is of concern?

MR. ROBBINS: Wayne Robbins for the record.

I'll start with the P.A. system. As you see, we did have a trend in the past with people tampering with P.A. systems. We put a focus in place to really emphasize the importance of the P.A. system.

You'll notice that the CNSC staff have said the situation has improved. We've also done a very large campaign to get our staff out in the field -- to get them to look at the P.A. system as a safety system; it's warning people of events. It's a human performance issue and we really elevated that to significance, and that's been very effective.

We've also gone down the field observation by managers to help focus on this area and, through those initiatives, we have had good performance to date. So I don't see a trend of negative issues with the P.A. system.

As far as missing the one hold point, that

was a procedure missed, on that. I believe that is a one-off event and we are continuing to monitor that, though, in our pressure boundary program.

MEMBER MCDILL: And, does staff have any comment -- or agree or disagree with those comments?

MR. SCHWARZ: Gary Schwarz for the record.

Yes; the incidents of speaker-tampering have been a difficult one for the station to deal with, and they certainly have been making a lot of efforts and they have been making some gains, lately. So the numbers of incidents of these have been going down.

With regard to the hold point being missed, we've taken a look at this and, as far as we can see, there's no problem from a process point of view. And that's what concerns us most, is that there would be a process issue, here, and the station has been taking the appropriate measures to correct these occurrences.

So, from our perspective, the station has been taking the appropriate corrective measures.

Thank you.

MEMBER MCDILL: Thank you; and one follow-up to Dr. Barnes with respect to the rate of FAC on the feeders' flow-assisted corrosion -- excuse me.

Has there been any upward trend in the 40 to 60 microns per year, or is it pretty much flat and

linear?

MR. ROBBINS: Wayne Robbins for the record.

I would like Craig Sellers to answer that on the feeder-specific, on the 40 to 60 micron rate.

MR. SELLERS: Craig Sellers for the record.

We have not seen an upward trend, yet, on feeder thinning at Darlington.

We continue to monitor and continue to plot the data. We've been actually acquiring feeder thinning data since about 2001, so it's fairly new yet to draw absolute, conclusive evidence, but what we have seen to date is in that range; around 60 to 100.

MEMBER McDILL: And there is some discussion in that same section on page 48 about intergranular cracking and none has been observed at this point and it sounds a bit -- in reading it, that staff is a little concerned and that OPG has not yet found any intergranular cracking.

But, perhaps I could ask what the scientific or engineering procedures are that you have in place to keep an eye on that?

MR. SELLERS: Craig Sellers, for the record.

Certainly, during our inspections of the feeders, we're looking for cracking in terms of UT, sure

wave and creeping wave.

These microcracks cannot be detected by that methodology, so when we remove feeders we take them to our research facility Kinectrics and examine them for microcracks. We have examined three feeders from Darlington; we have not seen any microcracks in those feeders.

MEMBER McDILL: So the plan of action then is when there is a replacement, you will test?

MR. SELLERS: Craig Sellers, for the record.

That is correct.

MEMBER McDILL: Could I have staff's comment on that, please?

MR. SELLERS: I'd like to ask Mr. Glen McDougall to answer that question, please.

MR. McDOUGALL: Glen McDougal, for the record.

Yes, what Mr. Sellers says is essentially correct. As he points out, the only reliable way of detecting microcracks is through destructive examination.

OPG removed three feeders in the fall 2006 and examined them for evidence of cracking and they did not detect any.

They have an ongoing crack inspection

program that is more or less risk-based. Essentially what they're doing is, they have determined the areas of feeders which would be most likely to be susceptible to intergranular stress corrosion cracking and they treat those as a priority for their cracking inspections.

MEMBER McDILL: Thank you.

You said he was essentially correct? Is there something I should ask about that?

MR. McDOUGALL: No, I didn't mean to indicate that there was anything missing; only that he was giving general comments on a very complex, technical issue.

MEMBER McDILL: Thank you.

THE CHAIRPERSON: Dr. Barnes?

Sorry, no.

Monsieur Harvey?

MEMBER HARVEY: My first question relate to the table on page 4.

There is only one 'C' in the table there, which is fairly good, but I would like to have just an explanation of the -- of that 'C', because in the report can read that the licensee has made considerable progress in identifying, resolving some of outstanding EQ issues.

And the implementation and sustaining aspects of the program are still evolving and have not yet

met CNCS (sic) expectations -- CNSC.

I just want to know the nature of the message given to the Commission when you say “still evolving.” Yes, there is a small arrow going up but there is no target date; what is the nature of the message and what can we deduct from that.

For example, in the day two, which staff have evolved to a sufficient point to have a ‘B’ or what’s the nature of that?

MR. SCHWARZ: Garry Schwarz, for the record.

There’s a fair bit of field work left to be done, and there’s also a fair bit of documentation work to be done to really get the equipment list lined up in such a way that there is a direct link between the equipment that needs to be maintained, qualified and the source document that really specifies what that qualification has to be which typically is an accident analysis in the safety report, which defines the extreme environmental conditions.

OPG is going to be finished the job -- right now they’re -- by 2010, at the end of 2010. They will be finished this work and a ‘C’ rating, as far as we are concerned basically remains in place until essentially, all of the work is completed.

So you will likely see the ‘C’ rating remain until 2010 unless the licensee is able to speed up the work in some way and complete it essentially, earlier than that.

But we’ve -- and -- but we have accepted this particular proposal from the licensee; we understand this.

From a safety perspective, there’s not an issue because the equipment remaining to be qualified has been looked at and examined to ensure that its lack of qualification, if I might put it that way, is not going to impinge on any particular accidents.

So from a safety perspective, there is not an issue here, although some things do need to be replaced just to bring their environmental qualification fully back up to speed.

MEMBER HARVEY: And that will stay under compliance until 2010?

That’s ---

Mr. SCHWARZ: That’s correct.

It will stay under -- that radar screen of a ‘C’ rating until 2010, until the work is all done.

MEMBER HARVEY: That conducts me to the other question; which is in the same line on page 6 of the H20.

You say not all items discussed in that document of equal importance to safety. I understand that very well but the only problem is the fact that if you discuss an element here in the report, it should be of a certain importance.

And each time that is just considered like not so important he can -- that can stay there for years and -- and there are no pressures on the licensee to solve the problem because, well the licensee can read the document and see that you consider that not important.

So I'm not comfortable with the fact that we've got elements quite hot in those documents which are not important.

So -- well, it might be just a comment but that's a problem for me, not to be able to -- I've got to just discard those things and say it's not important but why are you discuss those things in the document?

MR. VIGLASKY: Thank you very much. It's Tom Viglasky for the record.

Thank you very much for your record.

When we prepare the CMDs, we try to make them address the total aspect of the facilities operation, even those areas that are not safety significant. So we want to make -- ensure to the Commission that we are looking at all aspects of the operations.

We do try and focus in on the safety significant issues.

Environmental qualification -- even though we say it will take until 2010 for OPG to complete the work, we've accepted that environmental qualification is very important. We ensure that there is redundancy in the existing systems to ensure a continued safety even though all the equipment is not environmentally qualified.

The problem is from OPG's point of view and they should be able to respond to this, is that most of this work has to be done when the units are down because of the location of the equipment; so it has to be scheduled as work during outages as performed.

We do think it's important though.

THE CHAIRPERSON: I think what I may add to this as well, is this is during the licence period for which there is an application before us. So we are talking -- 2010 is within the preview of this licence period, so we would accept that this work has to happen within this licence period and, in fact, mentioning it here and in the annual reports does keep the feet to the fire of the company. It -- but I think the work has to be required at a level that if it was necessary immediately, it would be done immediately, and I think that would be true.

MEMBER HARVEY: It's on page 19, regulatory document R-8, we can read:

> "Complete operational test to demonstrate the effectiveness of each shutdown system shall be carried out at least once every two years. The staff has contracted a consultant to assist in the review of the acceptability of the change."

What is the intention in that study? Just to -- at the end, to change the regulatory document or just to test if the modification to that two-year obligation would be even satisfied with the -- I'm sorry, I don't know if you understand very well.

What I want to say is that you want to change it, and are you just testing if the change would, despite that, satisfy the regulation?

And a complement of that is when are you expecting the report? Will we have the report at the Day Two or what is the time target for the report?

MR. SCHWARZ: Garry Schwarz, for the record.

I'll answer the last one first. It's the easiest. We have the report. We will be meeting with the licensees later on this month to go over the report,

basically, with OPG.

The intention really is to basically determine -- the reason that we hired the contractor was to get some independent advice in terms of whether or not it was acceptable from a safety point of view to extend the testing frequency to once every three years for both of these shutdown systems. And we're talking here about the complete test of the shutdown system, where they have to, from power, either drop the shut-off rods and check to make sure that the shut-off depth and rate of reactivity change is acceptable, and the same thing with shutdown system number 2, which uses poison an injection.

So the question was, is it acceptable to change that test frequency from once every two years to once every three years?

And the reason that that request was made was because OPG is going to a three-year outage cycle for their reactors, and if they have to test -- continue to test the shutdown systems once every two years, of course, that means that you have to take an outage in between.

So OPG took and reviewed it. They determined that there was no impact on the continued reliability, safe operation of the facility. We wanted an independent opinion and we hired a consultant to bring us an independent opinion, and that's what we have in front

of us now and we'll be looking at that.

If, basically, CNSC staff agree to that, then we will be proposing a change to R-8 to change that testing frequency.

THE CHAIRPERSON: My understanding is that's been in place for quite some time, that document?

MR. SCHWARZ: Yes, it has. For Darlington it's been in place since Day One of the operation of Darlington.

THE CHAIRPERSON: I have a question. Unless I'm missing it, I don't see an organization chart actually in the CMD from OPG. Did I miss it or is there not an organization chart in here? I know that there's a note that this document has been supplied separately to the staff, but there isn't one in the CMD.

MR. ROBBINS: Wayne Robbins, for the record.

I don't have the date, but there was a document provided separately for the organization.

THE CHAIRPERSON: The Commission would like a copy of an organization chart that clearly shows responsibilities, clearly shows who is in charge of the quality program and health and safety, et cetera. So this is the normal requirement from us. So if we could have that in a CMD for Day Two, I would appreciate that.

Staff have commented on, as they understand it, the plans for the five years. So since OPG is asking for a five-year licence, we would like you to, in your supplementary for Day Two, outline your view as to what will be the five -- what will happen during these five years, in that that wouldn't be normally the role of the staff; that would be normally your role to say that, during those five years, this is what will be happening in that period of time.

I have a question. I note that -- and correct me if I'm wrong -- this is a question for OPG: In the area of consultation that you've used with the stakeholders, I appreciate that it's a broad approach, but I notice that it's still very much focused, if I'm correct, on the Darlington-Clarington area.

In some earlier -- I believe it was one of the EA discussions on Pickering, there was certainly a lot of interest in the Toronto area as well. And I'm just wondering, is there any plans from OPG's point of view -- because I know it's a corporate program, not necessarily a Darlington program -- to extend the consultation area that you've used in your consultations?

Certainly, I can imagine when there's new build there's going to be a lot of interest. So I would assume that this would be something that you'd want to

think about now.

MR. MITCHELL: For the record, Tom Mitchell.

Well, we certainly do consult in the Pickering area and as you've mentioned quite correctly, we have, as part of the refurbishment environmental assessment, we have been consulting on a broader area.

I think what was referred to here was a lot of interactions that we have, obviously, with the local community. We do host press tours and other tours for reporters, including from the Toronto newspapers. So I think that we have a broad outreach, but I take your comment as one that I think is quite important, and I would like to go back and reflect on that because, as you say, you know, it is really a regional issue. And, in fact, what I would say is that we have probably done quite a bit of consultation in the Durham region because obviously our two facilities are in that area. Our nuclear headquarters is in that area.

I think your question is have we looked broader than that.

THE CHAIRPERSON: Yes, I think in your reflection what I would like you to do then is discuss the area that you have been involved in, in the broader area for Day Two, but certainly I think it's reasonable to say,

from the experience that we've had in the Commission and, as I say, on the EA process that we looked at for Pickering, as you may recall, this was actually required by the Commission that the process be broader because of interest. So I think one could assume that this is a process that will be natural, a natural process. And since the Commission thinks it will be very involved in both refurbs and new build, that this would save us all a lot of building of relationships later, if it was done now. And we'll ask the staff, as it comes through, to mirror this in the discussions that we have as well. But I think all of us are going to have to change.

MR. MITCHELL: Madam Chair, we will expand our discussion on that in the Day Two material.

THE CHAIRPERSON: Not unrelated -- and it's a question for CNSC staff -- not unrelated to the organization chart is the issue of qualified staff. I think you did make a comment in reply to a question earlier from Mr. Graham, that as far as you were concerned, there was qualified staff.

Is that based on documents that you received from OPG for this facility? Do you have an opportunity to regularly look at this to look at the number and type of staff in areas to determine if there's enough qualified staff?

MR. SCHWARZ: Thank you, Madam Chair.

Garry Schwarz, for the record.

Yes, indeed, we do look at what's actually there on the station. Our inspection staff at the Darlington site, as a part of their routines, they go around and they look and they see and they ask questions about the numbers of qualified staff.

And so in their back and forth dialogue with OPG people at the site, they do get a very good understanding of the numbers and the qualifications of the staff. So that's something that they do as a part of their regular inspection, and that was really the basis for the comment that I made, that in fact, as far as the staff are concerned, there are, indeed, adequate qualified staff at the facility.

THE CHAIRPERSON: The Commission is aware that there is a lot of discussion going on about periodic safety reviews and the implications of this in the broad context.

Would OPG or the staff like to make any comments with regards to periodic safety review analysis?

MR. VIGLASKY: Can I start then? Tom Viglasky, for the record.

Our intent in the near future is to come to the Commission with a proposal for implementing a periodic

safety review concept into our regulatory processes.

One of our licence requirements, as we talked about here, the change is for document production and document control, and that really is one of the first steps to leading into a periodic safety review approach to regulation.

Once a licensee defines its upper level of controlled documents that it will have in place to control its operations, we would then allow the licensee to operate into that framework without having to come back to the Commission for additional approvals.

So it's a first step to enhancing the safety, I would say, of the nuclear facilities because it would require a formal periodic review of the safety of the plant comparison against current standard, and requirements to come up with corrective measures to upgrade the safety levels of the facility as it goes on during the years.

THE CHAIRPERSON: But it wouldn't have applicability then for this licence renewal that we see?

MR. VIGLASKY: No, not yet, Madam. We have not come to the Commission with this proposal yet.

THE CHAIRPERSON: So OPG doesn't have to react or you may wish to, Mr. Mitchell.

MR. MITCHELL: Tom Mitchell, for the

record.

Just a comment; I think we have been working on the building blocks of this with references and I think we are all gaining some experience as part of the refurbishment at Pickering B. We are doing what is called an integrated safety review, which in many cases is basically a periodic safety review, except you do it in that instance, and we would like to build on that experience.

We think there is probably some additional building blocks to using that information, in particular with regards to risk-informed decision-making, prioritising the output of that information, and how to lay that out into a safety implementation plan that would become something that we would commit to as part of that overall process.

So I think we are making progress on that area, just not specifically right now at the Darlington facility.

THE CHAIRPERSON: Thank you very much then for that.

Round two, any questions? Yes, Mr. Graham.

MEMBER GRAHAM: Two very short questions.

First of all, as a follow-up to the Chairman's questions with regard to communications and, in

your CMD, you talk about your newsletter Neighbours, which is distributed to 90,000 homes on a quarterly basis.

My question would be, in that newsletter, has it been indicated that you are now applying for a new five-year licence? Are the general public aware, through that newsletter that you are applying for a new five-year licence renewal and more or less a news item as to what is expected and what is required, and more or less some overview of how that licence process works? Has that been done?

MR. ROBBINS: Wayne Robbins, for the record.

Not specifically in the newsletter. We will be planning on that in upcoming newsletters coming out, but we are certainly keeping the council informed. We are communicating the re-licensing with the council directly on a much smaller focus, but the newsletter, we do have to enlighten more on the licensing period in that re-licensing.

MEMBER GRAHAM: So in your next newsletter, which is on a quarterly basis which will come out sometime relatively soon, you are indicating now that you will notify or will let the 90,000 households know of the renewal application and the process of which you're following and so on? Is that what I understand?

MR. ROBBINS: Wayne Robbins, for the record.

Yes, that's correct. We will be doing that to communicate to people about the licensing program and re-licensing at Darlington.

As I said, we've done it more locally, specifically around the council, but not directly in the newsletter.

MR. GRAHAM: Just an observation. It might be prudent that those 90,000 households would be aware.

My only other question is, and then I think at the outset of your remarks today, this is to OPG again, you said that you're more or less promoting people coming or staff coming forward, workers coming forward with their concerns and so on. And then in an earlier intervention today -- earlier licensing application today, I asked a question about whistleblowers.

Could you indicate roughly how many ordinary staff within the organization come forward on an annual basis with their observation and concern about the way things are going or about the way management is doing things?

THE CHAIRPERSON: And what that mechanism is I think.

MR. ROBBINS: Wayne Robbins, for the

record.

We have several layers to protect and encourage whistle blowing. We have our self-reporting system, which is the SCR process. That's a process that all of our staff can get on and put impersonal suggestions or concerns into the system, and we do track that every day.

We also have an ombudsman process that is corporate driven, that is enabling an employee to come forward and identify issues and concerns in a private manner.

We also have our staff out in the field engaged with people; talking, encouraging people to speak up, tell us what your issues are. We encourage a lot of face-to-face dialogue to make sure that we understand the issues and get them out.

MEMBER GRAHAM: And the other part of the question was, of issues of significance, how many would you get a year?

MR. ROBBINS: Wayne Robbins, for the record.

I would have to get back to you on that, Mr. Graham. I do not have the numbers specifically with the ombudsman. I can tell you how many SCRs we would generate, in the 15,000 range SCRs a year, which are

equipment people, all kinds of conditions.

MEMBER GRAHAM: Okay. On Day Two, if we could maybe have a specific number of major concerns that perhaps wouldn't have come to light if you didn't have a process like a whistleblower; that the general workforce didn't have that mechanism. I would like to see how much, how often and maybe how they were act upon, if they were of major nature. Thank you very much.

MR. ROBBINS: Wayne Robbins, for the record.

What you'd like then is more on the ombudsman process, the numbers and the significance?

MEMBER GRAHAM: Well, your explanation was that the ombudsman was maybe more of the significant ones.

MR. ROBBINS: Correct.

MEMBER GRAHAM: If there were significant ones that go through the general process, then I think we should have it also, but out of 15,000, I'm sure not all of the 15,000 were significant.

I'm talking about significant, whether they be through the regular process or through the ombudsman process, that we could more or less look at how significant that process is in identifying problems at the grassroots level.

THE CHAIRPERSON: Further questions?

Yes, Monsieur Harvey.

MEMBER HARVEY: Just a question of comprehension. On page 8 of CMD H20.B, just at the bottom of the page, at the licence condition 3.4:

> "Administration process. Following any reactor trip, the licensee must immediately determine whether the event could be a serious process failure. If the event cannot be clearly discounted as a serious process failure, then it shall be considered to be such for the purpose of this licence condition..."

And then on the other page:

> "CNSC staff must be advised immediately of the event."

Must be advised when? After the decision of the licensee or immediately when there is a trip?

MR. SCHWARZ: Garry Schwarz for the record.

Actually, our need to be advised relatively immediately, I would put it that way. It's not immediate at the instant, but within a reasonable timeframe. It is also covered in S-99, our reporting requirements, right now.

So the objective of this particular

requirement is to ensure that the CNSC staff are advised promptly of this particular event having occurred.

Now actually, as it turns out, in our current requirements, that's already required under S-99. So this is being a bit repetitive here, to be honest with you, but we would need to spell that out very clearly in the final administrative process that we develop and that we utilize for administering this particular condition.

MEMBER HARVEY: Because like this, we can interpret that, that if the licensee decides it's not a serious process failure, he doesn't have to inform you; written like this here.

MR. SCHWARZ: There is an issue of interpretation for events which border on being a serious process failure, but because we have staff on site what happens is the staff on site are notified about these events whether it’s a serious process failure or not, it’s a reactor trip, very quickly. Then we go into the determination mode very quickly with the licensee.

That actually happens already even though we don’t’ have this particular license requirement because serious process failures are very significant safety events and that’s why we basically take action on these kind of things immediately. The licensee understands that and the licensee knows that as well because, I won’t speak

for Mr. Robbins, he can tell you himself, but I'm sure that he will tell you that he is as much concerned about such events as we are. They should not happen often in the lifetime of a plant.

The design frequency for Darlington is something like no more than one in 10 years and the reason that they are so significant is because they call on the special safety systems to respond in anger, if I may put it that way, to the event, okay, because if they don't respond then there are some significant consequences. There are maybe fuel failures and other consequences as a result. So these are significant occurrences and people attend to them very quickly.

What this license condition does is it basically says here is a fairly high-risk significant event and it is one which warrants appropriate regulatory oversight. That's what this is really bringing to the forefront.

MEMBER HARVEY: Thank you.

THE CHAIRPERSON: I think there would also be another part of it that if the licensee didn't report an S-99 event that it would be a serious regulatory infraction, so I think they would have to think very seriously before that because the wrath of the Commission would be -- I think it would be an angry response on the

part of the Commission as well as earlier events. So I think there is a double incentive there as well.

This brings then to a close this hearing. The members have decided that at this time they will not ask for a closed session on security matters, but the Commission, which is subject to the information in CMD 07-H20A, reserve the right to have such a closed session on Day Two. That's my part of this.

Over to the secretary.

MR. LEBLANC: So this hearing is to be continued with Day Two on January 10, 2008. The public is invited to participate either by oral presentation or written submissions on Hearing Day Two. Persons who wish to intervene on that day must file submissions by December 10, 2007. The hearing is now adjourned to January 10, 2008.

THE CHAIRPERSON: The hearing on the application by OPG for acceptance of a revision to the value of their financial guarantee and related licence amendments will commence in 15 minutes.

Thank you.