

**Canadian Nuclear  
Safety Commission**

**Commission canadienne de  
sûreté nucléaire**

**Public hearing**

**Audience publique**

**Ontario Power Generation Inc.:**  
Application for the renewal of the  
Pickering Nuclear Generating  
Station A Operating Licence

**Ontario Power Generation Inc. :**  
Demande visant le renouvellement du  
permis d'exploitation des réacteurs  
de puissance de la centrale nucléaire  
de Pickering A

**February 17<sup>th</sup>, 2010**

**Le 17 février 2010**

Public Hearing Room  
14<sup>th</sup> floor  
280 Slater Street  
Ottawa, Ontario

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

**Commission Members present**

**Commissaires présents**

Mr. Michael Binder  
Dr. Moyra McDill  
Dr. Christopher Barnes  
Mr. Alan Graham  
Mr. André Harvey  
Mr. Dan Tolgyesi  
Dr. Ronald Barriault

M. Michael Binder  
Mme Moyra McDill  
M. Christopher Barnes  
M. Alan Graham  
M. André Harvey  
M. Dan Tolgyesi  
M. Ronald Barriault

**Secretary:**

Mr. Marc Leblanc

**Secrétaire**

M. Marc Leblanc

**Senior Counsel :**

Mr. Jacques Lavoie

**Conseiller principal:**

M. Jacques Lavoie

1           **Ontario Power Generation Inc.:**  
2           **Application for the renewal of the**  
3           **Pickering Nuclear Generating**  
4           **Station A Operating Licence**

5  
6                   **MS. MCGEE:** This is Day One of the public  
7           hearing. The Notice of Public Hearing 2010-H-03 was  
8           published on December 17<sup>th</sup>, 2009. Submissions from OPG  
9           and CNSC staff were due on January 18<sup>th</sup>, 2010.

10                   I note that supplementary information has  
11           been filed by OPG and CNSC staff since the first  
12           publication of the agenda. Commission Member Document 10-  
13           H6.1A and 10-H6.A are confidential and will be discussed  
14           in closed session, if necessary, after the public portion  
15           of the hearing.

16                   **THE CHAIRMAN:** Okay. So let's jump right  
17           into it and we are going to hear a presentation from OPG,  
18           as outlined in CMD H6.1 and H6.1B, and I understand that  
19           Mr. Wayne Robbins will make the presentation.

20                   Mr. Robbins, the floor is yours.

21  
22           **10-H6.1 / 10-H6.1B**

23           **Oral presentation by**

24           **Ontario Power Generation Inc.**

25

1                   **MR. ROBBINS:** Good afternoon, Chairman  
2 Binder and Members of the Commission.

3                   For the record, I am Wayne Robbins, the  
4 Chief Nuclear Officer for Ontario Power Generation.

5                   I would like to introduce to you Glenn  
6 Jager. Glenn was recently appointed as site Vice  
7 President of Pickering A.

8                   Glenn has worked at all three stations in  
9 the OPG fleet, as well as the training organization. He  
10 was a licensed shift manager, a director of operations of  
11 maintenance at Pickering B, and Glenn has spent two years  
12 with INPO and WANO as the team lead. He was conducting  
13 planned evaluations against industry standards.

14                   Most recently, Glenn was Deputy Vice  
15 President at Darlington. Glenn's 29 years of nuclear  
16 experience and his demonstrated leadership skills make him  
17 well qualified for his new role.

18                   With Glenn today are Pierre Tremblay,  
19 Senior Vice President, Nuclear Programs and Training; Mark  
20 Elliott, Senior Vice President of Inspection, Maintenance  
21 and Commercial Services. Mark was site Vice President at  
22 Pick A for the last three years.

23                   Sean Granville, Director of Operations and  
24 Maintenance for Pickering A; Rob Black, Director of  
25 Station Engineering for Pick A; and Donna Macdonald,

1           Manager of Regulatory Affairs for Pickering A.

2                           Other representatives of OPG are also here  
3 today to assist in responding to any questions.

4                           Before turning over to Glenn though, I'd  
5 like to make a few general statements for the benefit of  
6 the Commission.

7                           My first slide provides a simplified  
8 organizational chart to assist you in understanding the  
9 organization supporting Pickering A.

10                          As Chief Nuclear Officer for Ontario Power  
11 Generation, I report directly to the President and CEO. I  
12 am responsible for the three generating stations, as well  
13 as the organizations which directly support the day-to-day  
14 operation of the stations.

15                          This includes programs and training,  
16 engineering, performance improvement and nuclear  
17 oversight, supply chain and waste management. Our focus  
18 is on the core business of operational excellence.

19                          At the station level, the organization  
20 includes operations and maintenance, station engineering,  
21 work management, performance improvement and nuclear  
22 oversight, and business services and regulatory affairs.

23                          The Pickering A station is one of the three  
24 stations in OPG's nuclear fleet. The fleet is supported  
25 by a capable central organization responsible for

1 developing and maintaining programs, establishing  
2 standards of excellence and providing oversight and  
3 technical assistance.

4 OPG is committed to continuous improvement  
5 in the areas of safety, reliability, human performance and  
6 value for money. We call these our four cornerstones of  
7 excellence.

8 We have benchmarked our performance against  
9 the industry on key performance measures and have in place  
10 improvement plans to drive the fleet to nuclear  
11 excellence.

12 In addition, each of the stations has in  
13 place continuing improvement plans for the next five  
14 years. With links to these nuclear fleet improvement  
15 plans, we are proud of the improvements made at Pickering  
16 A over the last five years and are confident that the  
17 station is on a path to excellence.

18 In 2009, Pickering A's safety performance  
19 was in the industry top quartile. Maintenance backlogs  
20 were the second lowest among CANDU stations in Canada and  
21 Unit 1 had its best performance in 30 years.

22 I will now turn the presentation over to  
23 Mr. Glenn Jager. Thank you.

24 **MR. JAGER:** Thank you, Wayne.

25 For the record, my name is Glenn Jager,

1 Senior Vice President of Pickering A.

2 My presentation today is in support of our  
3 request for the renewal of the Pickering A operating  
4 licence for another five years. I will be discussing the  
5 following key points.

6 Pickering A performance has steadily  
7 improved in many areas important to safety and reliability  
8 of the plant over the licence period. OPG continually  
9 benchmarks the performance at Pickering to industry  
10 excellence, to close gaps and effectively direct efforts  
11 for improvement.

12 Pickering A uses standards, programs and  
13 processes that are developed by the industry with proven  
14 results. I will discuss some of those areas today.

15 We acknowledge that the performance areas  
16 identified by the CNSC staff as requiring attention and  
17 commit to bring these issues to closure.

18 Finally, OPG is committed to taking  
19 Pickering A performance to excellence. I can't accept  
20 anything less than that.

21 My presentation today is structured around  
22 the four cornerstones that drive our performance towards  
23 nuclear excellence. The first cornerstone is safety which  
24 encompasses nuclear safety, radiological safety,  
25 conventional safety and environmental safety.

1                   Human performance and leadership includes  
2                   the investment in our staff to ensure they are qualified,  
3                   capable and exhibit the right behaviours.

4                   Liability which is working to ensure all  
5                   systems deliver intended safety benefit to maximize plant  
6                   reliability and maximize available margins.

7                   Value for money refers to ensuring  
8                   corporate resources are effectively used and directed,  
9                   that processes are effective to ensure safety is built  
10                  into how we operate.

11                  In the area of nuclear safety, our reactor  
12                  trip rate has improved since 2007 to below the station  
13                  target of one trip per 7,000 hours critical. In 2009, all  
14                  special safety systems met or bettered unavailability  
15                  targets and there were no process system failures that  
16                  challenged safety systems.

17                  In the area of radiological safety, no  
18                  personnel doses exceeded either regulatory or  
19                  administrative limits. External and internal radiological  
20                  dose is better than target and improving.

21                  As well, there were zero unplanned  
22                  exposures over the last two years and precursor tritium  
23                  uptakes and personnel contamination events have been  
24                  reduced through training, personnel engagement and  
25                  supervisory oversight.

1                   Radiological dose to the public is trending  
2 well below one percent of the regulatory limit.

3                   In environmental safety, we have reduced  
4 waste production by 50 percent over the licensing period  
5 through innovative use of rewashable items and through  
6 recycling.

7                   Over the licensing period, we have had no  
8 major or moderate spills and only three minor spills. All  
9 major sources of PCBs have been removed from the site.

10                  Pickering has been certified ISO 14001  
11 standard for environmental management systems for the past  
12 10 years and maintains programs to meet that standard.

13                  In 2007, the Pickering station received the  
14 International Corporate Habitat of the Year Award for our  
15 Wildlife Habitat Program and management of the lands  
16 around the Pickering site.

17                  In 2006, the station achieved 4.6 million  
18 hours work without a lost-time accident. Currently,  
19 Pickering A has worked over three million hours or 469  
20 days without a lost-time accident.

21                  Our accident severity rate is in the  
22 industry top quartile and our goal is zero injuries.

23                  In the area of human performance, over the  
24 last five years reporting of low-level issues and adverse  
25 conditions has grown. This enhances our ability to



1 improve safety, human performance and plant reliability.  
2 The reporting level is consistent with the top performing  
3 plants in the industry. The number of human performance -  
4 related events, as measured by our station event-free day  
5 resets, has decreased to industry standard.

6 OPG has a strong culture of self-assessment  
7 supported by a framework of communication, oversight and  
8 accountability. Opportunities to improve are identified  
9 and improvements undertaken through many independent and  
10 internal evaluations.

11 Nuclear oversight. This is an organization  
12 that provides an internal audit function independent of  
13 the sites. They report to the chief nuclear officer.

14 Nuclear Safety Review Board. The NSRB is  
15 comprised of external industry leaders who carry out  
16 annual safety reviews at each of the sites and report to  
17 the chief nuclear officer and the Board of Directors. Our  
18 nuclear oversight committee is a sub-committee of the  
19 Board of Directors and they evaluate plant performance  
20 quarterly.

21 Peer reviews and technical support missions  
22 are completed each year to assist and evaluate the plant.  
23 And, finally, we commission an independent team to  
24 evaluate safety culture every three years.

25 With respect to staffing and training,

1 staffing plans are maintained for all job functions across  
2 the fleet and succession plans are in place for all  
3 leadership positions. Significant investment has been  
4 applied to our training programs in operator  
5 certification, engineering and maintenance. Leadership  
6 training for first-line managers and middle managers has  
7 been developed to improve accountability and  
8 effectiveness.

9 Our programs are benchmarked to the  
10 industry and we participate directly in industry  
11 workshops. Our training programs were recently evaluated  
12 as an industry strength and, as a result, employee  
13 engagement has steadily improved each year.

14 Reliability. Pickering A has the second-  
15 lowest corrective and elective maintenance backlogs in  
16 Canada. Our long term goal is to continue to reduce  
17 backlogs to industry best.

18 Programs have been established to industry  
19 standards for reliability and aging management and  
20 performance continues to improve. We're applying methods  
21 to increase reliability which have been demonstrated  
22 effective in the industry and at OPG.

23 Our goal is to complete 800 work orders in  
24 2010 which have been selected to improve equipment  
25 performance. Based on a model used successfully by the

1 fleet at Pickering B and Darlington, OPG established a  
2 project in 2008 to accelerate equipment reliability  
3 improvements at Pickering A over three years.

4 We have completed over 30 root-cause  
5 evaluations of equipment failures and are well into our  
6 large motor refurbishment or replacement and our control  
7 valve program.

8 Fuelling machine parts have been sourced to  
9 enable required preventative maintenance and reduce  
10 unavailability of the fuelling machines. Increased focus  
11 in this area has reduced the forced loss rate from  
12 fuelling machines from 5 percent down to just 0.1 percent  
13 last year.

14 We've installed new equipment to replace  
15 aging plant components, some of which appear on this  
16 slide. We've created 1,600 maintenance strategies for  
17 equipment to sustain improvements made and make our work  
18 processes more efficient.

19 Our primary contributors to forced losses  
20 will be corrected when we complete the spring outage  
21 campaign this year, and the permanent ISTB modification  
22 will be in service following this outage.

23 Based on the experience at Darlington and  
24 Pickering B, it is expected to take up to three years to  
25 realize the full impact of this project. However, we've

1 already begun to see positive improvements in plant  
2 performance.

3 Last year, Unit 1 achieved its best  
4 operating performance in 30 years. Our current  
5 performance is not yet meeting my expectations and I'll be  
6 continuing to drive performance in this area.

7 As with Pickering B and Darlington, we are  
8 committed to investing in the plant to reach our  
9 performance goals and standards. We continue to improve  
10 work processes and schedule confidence to maximize safe  
11 execution at work and plant operation.

12 Outage and online work management process  
13 has improved during the current licensing period using  
14 industry best practices. In 2009, we achieved a schedule  
15 performance of more than 83 percent adherence and 92  
16 percent completion. By improving schedule performance we  
17 maximize the safety of the station.

18 Units 2 and 3 safe storage project is  
19 nearing completion. Currently, the units are defuelled  
20 and the systems have been drained and dried. Units 2 and  
21 3 will be separated from the negative pressure containment  
22 system. Equipment required to support the operating units  
23 is being maintained at the same standards as are applied  
24 to the operating units, Units 1 and 4.

25 With respect to the issues noted by the

1 CNSC staff in the CMD, plans have been reviewed and are  
2 generally accepted. The permanent inter-station transfer  
3 bus is currently being installed. It will be available  
4 for service following spring outage this year.

5 Analysis of minimum shift complement is  
6 well underway. This is the first-time use of methodology  
7 developed to the recently issued guidelines. An  
8 integrated full validation of the analysis is planned for  
9 this third quarter, and following this the minimum shift  
10 complement document will be revised and submitted to the  
11 CNSC for approval by the end of this year.

12 The Pickering A safety culture is strong  
13 and continues to improve using recommendations from each  
14 assessment. The latest assessment, the CNSC independent  
15 review on organization and management, provided additional  
16 insights that we are following up on. Good progress is  
17 being made on these areas.

18 We are working closely with the CNSC staff  
19 to bring the issue regarding fish mortality to closure. A  
20 barrier net has been installed and studies are underway to  
21 verify the effectiveness of the net. This will determine  
22 if additional measures are required. Studies are also  
23 underway to determine the impact of the thermal plume on  
24 fish spawning in the lake. A report is due to the CNSC  
25 this summer.

1           In our application for licence renewal, we  
2           include a description of significant activities beyond the  
3           next licensing period. It is important to note that there  
4           are adequate margins in our major components to operate  
5           well beyond the current licensing period. The current  
6           predicted end-of-service date, based on the limiting  
7           component, is the mid-2020s. All major components have  
8           life cycle management plans. We will continue to  
9           demonstrate fitness for service of major components  
10          through inspection, surveillance and maintenance programs.

11           Pickering Nuclear is committed to an open  
12          and transparent relationship with stakeholders, the public  
13          and our community. We foster this relationship through  
14          various means, including face-to-face communications  
15          through public meetings, quarterly newsletters to homes  
16          and businesses, and an OPG website which provides  
17          information on our safety, operational and environmental  
18          performance.

19           We are committed to ensuring a strong  
20          relationship with our host community. We do this not only  
21          through financial contributions but also initiatives where  
22          our staff are personally involved in the community. We  
23          work with local businesses, health care, and charitable  
24          groups to help them achieve their goals in the community.  
25          We've been recognized with several awards from community

1 organizations in the areas of corporate citizenship and  
2 environment. This is a core part of who we are as an  
3 organization and we are honoured to have the relationship  
4 we do with the members of the community.

5 In conclusion, we have demonstrated  
6 performance improvement over the current licensing period  
7 and have plans in place to continue driving performance to  
8 industry excellence. OPG has established programs and  
9 processes benchmarked to industry standards.

10 My priorities are to continue to build  
11 safety into everything we do and improve accountability  
12 and ownership. This will enable us to deliver our  
13 commitments and plans to reach excellence and increase  
14 plant reliability to maximize safety and production.

15 We respectfully request that this  
16 Commission renew the operating licence for Pickering A for  
17 a period of five years.

18 OPG understands and supports the new  
19 licensing process. The new licence and licence conditions  
20 handbook will help staff ensure there is a common  
21 understanding of expectations, and we are working with the  
22 CNSC staff as a licence conditions handbook is being  
23 finalized.

24 I will now turn over to Pierre Tremblay who  
25 will provide a comment on the recent OPG announcement.





1 OPG agreed to produce an end-of-life plan for the facility  
2 in the event of a decision not to refurbish. The plan was  
3 committed to be produced by the end of last year. Near  
4 the end of last year, and in consideration of the imminent  
5 decision on this matter, OPG sought and obtained CNSC  
6 concurrence to delay the submission of the plan until  
7 later in 2010 to allow for an overall operational plan to  
8 be developed that would incorporate both Pickering A and B  
9 stations going forward.

10 This request was granted and a high-level  
11 plan is being produced for end of March 2010 with a  
12 detailed plan to be submitted to staff by end of September  
13 2010.

14 OPG is committed to the safe and reliable  
15 operation of the Pickering site. Pickering B's  
16 performance has steadily improved over the previous last  
17 licensing period and, as such, was granted a five-year  
18 licence in July of 2008. Its performance last year was  
19 one of its best on record and its management team  
20 continues to demonstrate the drive towards nuclear  
21 excellence.

22 The team at Pickering A is on a similar  
23 path as part of a fleet program to bring best practices  
24 and standards to all aspects of its operation. This drive  
25 will be sustained for the long term.

1 Glenn?

2 **MR. JAGER:** We are available to answer any  
3 questions the Commission might have. Thank you.

4

5 **10-H6 / 10-H6.B**

6 **Oral presentation by**

7 **CNSC Staff**

8 **THE CHAIRMAN:** Thank you.

9 Before opening the floor for questions, I  
10 would like to hear the presentation from CNSC staff as  
11 outlined in CMD-H6 and 6.B. And I understand, Mr. Jammal,  
12 you will make the presentation.

13 The floor is yours.

14 **MR. JAMMAL:** Merci, monsieur le président,  
15 membre de la Commission. Je suis Ramzi Jammal, premier  
16 vice-président au sein de la Commission de Sûreté  
17 nucléaire.

18 Avec moi aujourd'hui, monsieur Tom  
19 Schaubel, directeur de la division réglementaire de  
20 Pickering; monsieur Ken Lafrenière, directeur général en  
21 intérim; Dr. Rzentkowski suit sa formation linguistique;  
22 madame Lisa Love-Tedjoutomo et Claude Morency, chargé  
23 d'affaires principales pour ce projet et pour le site  
24 Pickering.

25 The operation team would like to present

1 CMD's 10-H6 and H6.B for your consideration concerning  
2 Ontario Power Generation Application for the Renewal of  
3 Operating Licence for the Pickering A.

4 First, I will begin the presentation by  
5 describing the changes we have made to the CMD and the  
6 format of the licence under the licence reform initiatives  
7 of the CNSC.

8 The key improvement initiatives influencing  
9 the structure of the CMD and this licence and its licence  
10 conditions handbook are the licensing basis, the CSA  
11 Canadian Standard Association Standard N286, and the new  
12 safety control areas as listed in the CMD.

13 Under the licence reform, the proposed  
14 licence for Pickering A follows the generic licence format  
15 for nuclear power plants. The generic licence provides  
16 simplicity and clarity by referring to well-defined  
17 licences; policy and programs of the licensees; specific  
18 requirements arising from national and international  
19 standards; and regulatory documents as published by the  
20 CNSC. In addition, clearly states tables that delineate  
21 the limits and the operational limits as approved by the  
22 Commission.

23 The licence conditions handbook provides  
24 clarity in compliance requirements and expectations. It  
25 establishes a process for the CNSC management of records

1 and documents and it establishes timelines for  
2 implementation of specific requirements, and the criteria  
3 required to obtain Commission approval or CNSC staff  
4 consent.

5 To conclude this slide, the licence  
6 conditions handbook provides clarity of regulatory  
7 requirements to OPG and transparency to the public.

8 The objective of the licensing basis  
9 defines what licensees must do to demonstrate that they  
10 are qualified and have made appropriate provisions for the  
11 safety and security of the public and the environment.

12 The definition of licensing basis  
13 encompasses the *Nuclear Safety Control Act*; CNSC  
14 Regulations and the regulatory documents; conditions and  
15 safety control measures described in the licence; and  
16 safety and control measures described in the application;  
17 and documents needed to support the application.

18 The proposed licence clearly states that  
19 the licensee shall conduct activities in accordance with  
20 the licensing basis.

21 A fundamental addition to the licence is  
22 the reference to the Canadian Standard Association  
23 Standard N286, *Management System Requirements for Nuclear  
24 Power Plants*, where the licensee establishes a management  
25 system that governs the operation of the station.

1                   CNSC Staff considers this standard meets  
2                   the requirements of the Class I Nuclear Facility  
3                   Regulations for a quality assurance program for NPP  
4                   licences.

5                   The next slide shows a snapshot of the  
6                   cover page of the standard, and I would like to note that  
7                   in your handout there is an administrative error. In the  
8                   title of the slide, it should read "N286" not "N285".

9                   I will now move on to the safety control  
10                  areas and the new CMD format. The CMD before you  
11                  incorporates the new safety and control areas under three  
12                  primary functional areas; management, facility and  
13                  equipment, and core control processes.

14                  The current CMD has 14 safety and control  
15                  areas as well as 20 of the review topics that cover all of  
16                  the licensed activity on site, such as waste and  
17                  transport. The old CMD format had 9 safety areas and 13  
18                  programs.

19                  This concludes my presentation, and I will  
20                  now turn the floor to Mr. Tom Schaubel with respect to the  
21                  staff assessment of the licence application for Pickering  
22                  A. Tom?

23                  **MR. SCHAUBEL:** Good afternoon. My name is  
24                  Tom Schaubel, Director of the Pickering Regulatory  
25                  Program.

1                   The outline of the presentation includes  
2                   discussions on the following topics. The licence renewal  
3                   application; the overall station performance for safety  
4                   and control areas and the review topics; the main issues  
5                   or shortcomings that influence the ratings; a summary of  
6                   other information in the CMD; and CNSC's conclusions and  
7                   recommendations.

8                   On this slide, I will review the licence  
9                   application. The nuclear power reactor operating licence  
10                  for Pickering A expires June 30<sup>th</sup>, 2010. On September 28,  
11                  2009, Ontario Power Generation applied to have this  
12                  licence renewed for a period of five years.

13                  CNSC staff has reviewed the application and  
14                  associated follow-up correspondence and concludes that the  
15                  application contained all of the information prescribed by  
16                  the regulations. It also contained additional information  
17                  requested by CNSC staff on long-term operating plans,  
18                  including safety improvement plans for the proposed  
19                  licensing period.

20                  On the next two slides, I will review the  
21                  overall station performance for the safety and control  
22                  areas and review topics.

23                  The overall performance at Pickering A has  
24                  noticeably been improving over the past two years. The  
25                  table on this slide shows the 14 safety and control areas

1 and their ratings and trends. The ratings and trends are  
2 based on the licensee performance during the current  
3 licensing period, which covers the years 2005 to 2009.

4 OPG met or exceeded the regulatory  
5 requirements in all safety and control areas for both  
6 program documentation and their implementation. The only  
7 change in rating from that published in the 2008 NPP  
8 report is for the implementation of the environmental  
9 protection, which was below expectation and is now  
10 considered satisfactory.

11 Security information is protected and is  
12 the subject of a separate CMD.

13 This table shows that OPG met regulatory  
14 requirements for the program documentation of all 20  
15 review topics. Hence, they were rated satisfactory.

16 The review of the implementation of the  
17 programs revealed three below expectations ratings for  
18 plant management, human factors and plant design. Each of  
19 these three topics indicated an improving trend as the  
20 licensee is making progress in resolving the issues  
21 related to these topics.

22 This slide discusses the issue of safety  
23 culture. In 2007, the Commission directed CNSC staff to  
24 initiate an independent assessment of organization and  
25 management at Pickering A. This assessment was completed

1 in May 2009.

2 The findings were presented to OPG in  
3 September 2009. Three major themes identified that  
4 required action by the licensee were: first, clear  
5 identification of accountability for safety; second, more  
6 leadership in driving the organisation towards a safer  
7 approach; and third, a more open and blame-free  
8 environment for identifying shortcomings.

9 Pickering A has submitted a corrective  
10 action plan to CNSC to correct these issues. This  
11 submission is currently under review by CNSC staff.

12 Minimum shift complement is the number and  
13 qualification of workers needed to successfully respond to  
14 all credible events. Currently, the minimum shift  
15 complement is based on an accident of a single unit. CNSC  
16 staff has requested that an assessment of common mode  
17 events is needed to verify the minimum shift complement.

18 OPG is currently analyzing the minimum  
19 shift complement requirements, taking into consideration  
20 the response requirements for common events. This  
21 analysis includes integrated validation exercise, which  
22 will test in real time the ability of the minimum shift  
23 complement to perform critical actions required to put the  
24 facility in a safe state.

25 Once the analysis and validation work has



1       been completed, OPG will revise their station's shift  
2       complement document and request a licence amendment to  
3       reflect the results of this analysis.

4               Initial results of the project suggest that  
5       the current staffing levels for a minimum complement may  
6       be adequate for the common mode event scenario analyzed.  
7       CNSC staff will continue to monitor the progress and this  
8       project is expected to be complete by the end of 2010.

9               This slide discusses the shortcomings  
10       related to the inter-station transfer bus electrical  
11       system. The ISTB system provides power from Pickering B  
12       to essential equipment after a main steam line break.

13              It was found in 2007 that the system did  
14       not have the load carrying capacity required. OPG's  
15       investigation revealed this deficiency had existed since  
16       its installation in 1991. Consequently, both Units 1 and  
17       4 were shut down for several months in 2007.

18              Temporary modifications resolved the under-  
19       capacity issue later in 2007 and the units were restarted.  
20       A permanent modification has been reviewed and accepted by  
21       CNSC staff and it will be installed during the vacuum  
22       building outage in the spring of 2010, prior to the  
23       restart of any of the units after that outage.

24              This slide discusses the issue of fish  
25       mortality which had previously impacted the rating of

1 environmental protection.

2           During the environmental assessment, CNSC  
3 staff concluded that the fish mortality from impingement  
4 at the cooling water intake was not acceptable. The  
5 Department of Fisheries and Oceans had identified this  
6 issue.

7           CNSC requested OPG to implement interim and  
8 permanent mitigation measures by 2012. OPG is complying  
9 with CNSC's request. A barrier net surrounding the water  
10 intake was installed in October 2009 as an interim measure  
11 and a monitoring program has been implemented to test  
12 effectiveness.

13           The results of the effectiveness test will  
14 be submitted in July of 2011. Once the effectiveness of  
15 the barrier net has been determined, OPG will propose the  
16 final mitigation measures to reduce fish mortality.

17           CNSC staff are satisfied with the work OPG  
18 has done since installing the barrier net and the  
19 increased effort and follow-up monitoring.

20           I will now go over a brief summary of CNSC  
21 staff conclusions of other information.

22           For the area of cost recovery, CNSC staff  
23 concludes that OPG is in good standing with respect to  
24 cost recovery fee regulations requirements for Pickering  
25 A.

1                   For the area of environmental assessment,  
2                   the proposed licence renewal is an amendment to the  
3                   licence under the *Nuclear Safety and Control Act*. There  
4                   is no requirement for an environmental assessment pursuant  
5                   to the *Canadian Environmental Assessment Act*.

6                   For the area of financial guarantee, CNSC  
7                   staff concludes that financial guarantees remain valid,  
8                   sufficient and in effect as of December 2009.

9                   Nuclear Insurance Association of Canada has  
10                  provided a Certificate of Insurance to January 1<sup>st</sup>, 2011.  
11                  CNSC staff is satisfied with OPG's provision to fulfil its  
12                  obligations.

13                  For the area of non-proliferation, OPG  
14                  continue to provide regular and accurate information in a  
15                  timely manner on the status of its international  
16                  obligations.

17                  CNSC staff has reviewed the current  
18                  activities for receipt, storage and handling of cobalt-60  
19                  and concludes OPG's existing processes for managing  
20                  cobalt-60 are adequate.

21                  For the area of licensee public information  
22                  activities, CNSC staff concludes that OPG's information  
23                  program and implementation are satisfactory.

24                  CNSC staff has reviewed OPG's improvement  
25                  plan, which has a variety of improvement initiatives,

1 including implementation of plans for new regulatory  
2 standards, initiatives related to minimum complement,  
3 safety culture, inter-station transfer bus, and fish  
4 mortality.

5 CNSC staff concludes that OPG's safety  
6 improvement plan is adequate for the proposed licensing  
7 period.

8 The CNSC's five-year regulatory activity  
9 plan includes key areas that CNSC staff will monitor over  
10 the next licensing period.

11 OPG's long-term plan includes activities  
12 envisaged beyond the next licence period. Pickering Units  
13 1 and 4 will continue to operate as long as fitness for  
14 service of major components can be demonstrated.

15 The current most likely predictive date for  
16 reaching end of life is the mid-2020s. OPG will continue  
17 to implement the major component lifecycle management  
18 plans and inspection programs and plant aging will be  
19 managed.

20 I will now move to the staff conclusions  
21 and recommendations.

22 The overall performance of OPG at Pickering  
23 A during the current licensing period is rated as  
24 satisfactory. Noticeable improvements have been observed  
25 since the previous licence period.

1 OPG's application for licence renewal at  
2 Pickering A meets all requirements of the *Nuclear Safety*  
3 *and Control Act* and its relating regulations.

4 An environmental assessment under the  
5 *Canadian Environmental Assessment Act* is not required for  
6 this licence renewal.

7 OPG is qualified to operate Pickering A.  
8 OPG has made and will continue to make adequate positions  
9 for safety and OPG meets all the criteria of CMD 02-M12  
10 for a five-year licence at Pickering A.

11 CNSC staff recommended to the Commission in  
12 the CMD to accept the following: an environmental  
13 assessment pursuant to the *Canadian Environmental*  
14 *Assessment Act* is not required; OPG is qualified to carry  
15 on the activities that the licence will authorize; OPG has  
16 and will, in carrying out these activities, meet the  
17 requirements of Subsection 24(4) of the *Nuclear Safety and*  
18 *Control Act*; the proposed changes to the licence as set  
19 out in supplemental CMD 10-H6.B; the licence conditions  
20 handbook and the proposed delegation of authority as set  
21 out in the supplemental CMD and to renew the Pickering A  
22 licence pursuant to Section 24 of the Act for a period of  
23 five years until June 30<sup>th</sup>, 2015.

24 That concludes CNSC staff's presentation  
25 and I will now turn the microphone back to Mr. Ramzi

1 Jammal. Thank you.

2 **MR. JAMMAL:** Thank you, Tom.

3 Mr. President, we're available to answer  
4 any questions you might have.

5 **THE CHAIRMAN:** Thank you.

6 So let's jump right into it, starting with  
7 Dr. McDill.

8 **MEMBER McDILL:** Thank you.

9 I'm not even sure where to start. I think  
10 I'd like to start with several overlapping areas on page  
11 63 of staff's document. There's a reference to the safety  
12 assessment of the impact of safe storage of Units 2 and 3  
13 on 1 and 4 and there's also a comment on page 71 with  
14 respect to engineering change control, so my questions are  
15 to both staff and OPG.

16 When will the safety assessment be reviewed  
17 by CNSC staff and how will the challenges in engineering  
18 change control, particularly the lack of objective  
19 documented assurance -- how will those two go together as  
20 Units 2 and 3 are isolated? Maybe I could start with  
21 staff.

22 **MR. SCHAUBEL:** For the record, Tom  
23 Schaubel.

24 OPG has just provided a submission on the  
25 safe storage project. The safety report will be revised

1 when the project has been completed but they have provided  
2 details fairly recently.

3 As far as the engineering change control,  
4 those changes were errors in documentation or problems  
5 with the documentation. They have been resolved. OPG has  
6 revised their program document to correct those errors.

7 **MEMBER MCDILL:** So engineering change  
8 control issues are all resolved and it's just with respect  
9 to isolation of Units 2 and 3. There's a long list of  
10 charts at the back, but maybe OPG can just sort of give us  
11 a rough outline of how that will all fit together in the  
12 next few years.

13 **MR. JAGER:** Glenn Jager for the record.

14 The safe store project will be largely  
15 concluded by the end of March and then the work will --  
16 the majority of the work will conclude when we exit the  
17 VBO. In terms of the safety analysis and safety report,  
18 that volume 1 of the safety report will be completed by  
19 June 30<sup>th</sup> -- is the target date -- and volume 2 of the  
20 safety report is expected in the fall.

21 **MEMBER MCDILL:** Sorry, just missed the end  
22 of that last sentence.

23 **MR. JAGER:** Volume 2 of the safety report  
24 will be completed in the fall of this year.

25 **MEMBER MCDILL:** And then back to staff.

1 With respect to the incomplete generic action items, I  
2 know they're not isolated to OPG but how will this affect  
3 the operation of the various units going forward,  
4 particularly the positive void reactivity, the closure  
5 date still to be determined and the others that don't have  
6 a date. Several are listed as 2010 but several have no  
7 date.

8 **MR. COUTURE:** Michel Couture, Director,  
9 Physics and Fuel Division, for the record.

10 Regarding the generic action items on  
11 positive void reactivity and the replacements of reactor  
12 physics computer codes, recently there was a completion of  
13 a large-LOCA working group that involved a number of  
14 recommendations which also touch upon the void reactivity.  
15 OPG will be submitting a plan, a work plan to address the  
16 issues that had been identified by the large-LOCA working  
17 group and the group that subjected the recommendations of  
18 that group to risk-informed decision-making.

19 Once we receive the plan, the work plan  
20 which will indicate all the activities that OPG is  
21 planning to do to address the large-LOCA problem, we will  
22 revisit the generic action items to see how this plan  
23 would address the issues. The plan is supposed to be  
24 submitted, I believe, in April.

25 **MEMBER McDILL:** Does OPG agree with April?



1                   **MR. JAGER:** Glenn Jager, for the record.

2                   For the large-LOCA analysis and in the  
3 supporting analyses there I'll ask Fred Dermarkar to  
4 comment on the status and our progress there.

5                   I would say that the results thus far and  
6 in that area, our margins are sufficient at this time and  
7 are adequate. The plant is safe and in terms of the  
8 status of the analysis and our progress, I'll ask Fred  
9 Dermarkar to comment.

10                  **MR. DERMARKAR:** Thank you, Glenn. My name  
11 is Fred Dermarkar, for the record.

12                  We are in active discussion on this issue  
13 with the CNSC staff. It was recently discussed at a  
14 Canadian nuclear utility executive forum, the whole issue  
15 of large LOCA, and a number of these generic action items  
16 are tied to this issue. We do have another meeting  
17 planned, actually a telecon planned with the CNSC either  
18 later this week or early next week where we are laying out  
19 the plans, the path forward.

20                  We would like to have a plan by April of  
21 2010 but this is an item that is in active discussion  
22 right now and we will be -- my staff and I will be meeting  
23 with Michel and his staff actually later this week or next  
24 week and formalizing the path forward.

25                  So I'm not prepared to commit to April 2010

1 because it will depend upon the outcome of our discussion.  
2 But as a target date, it is a target that we are aiming  
3 at.

4 **MEMBER McDILL:** Are we likely to have it  
5 for day two? Maybe I could ask both sides.

6 **MR. DERMARKAR:** Fred Dermarkar, for the  
7 record.

8 For day two we will have a clear direction  
9 on what the path forward is.

10 **MR. JAMMAL:** For the record, Ramzi Jammal.

11 If I may, Dr. McDill, clarify one thing is  
12 the -- this is for the analysis with respect to the  
13 current operation safety and mitigation measures. The  
14 current operation is safe. This is for proof of analysis  
15 for the future.

16 So I will pass it on to Mr. Ken Lafrenière  
17 for his precision but we will have the plan for day two.

18 **MR. LAFRENIÈRE:** Ken Lafrenière, for the  
19 record. Acting Director, DPR.

20 Yeah, the generic action items, as Ramzi  
21 Jammal mentioned, are all being managed appropriately.  
22 They don't pose a risk to the current operation or to the  
23 licensing period being recommended in front of the  
24 Commission.

25 Each individual action item has been risk-

1 ranked. There are risk control measures in place and the  
2 discussions that you just previously heard from OPG and  
3 our senior staff are the outcomes of the discussions  
4 between staff to determine a path forward on each one of  
5 those integral action items.

6 **MEMBER MCDILL:** Thank you.

7 My next questions are a little bit more  
8 specific. With respect to the organizational chart  
9 presented by OPG, why are there temporary positions out on  
10 the --- I've got the big one -- on the right-hand side.  
11 There's the manager of regulatory affairs projects, double  
12 asterisk, which is a temporary position. How long is that  
13 temporary position and what effect does it have going  
14 forward into the five-year licensing period?

15 Also, the director of equipment and  
16 reliability is a temporary position.

17 **MR. JAGER:** Glenn Jager, for the record.

18 The chart that you have, the two temporary  
19 positions, the first one is in the licensing area. It's  
20 Donna, to my right, who is supporting the relicensing of  
21 Pickering A and we do normally have a DLA, who is Richard  
22 McEacheron. He is permanently in role. Donna is at the -  
23 providing support to this hearing and the application.  
24 The second position is Jennifer Noronha. She is tied to a  
25 three-year reliability improvement project that I spoke to

1 in my presentation to the Commission, and that project is  
2 ongoing. We'll evaluate the progress when the project  
3 concludes as to whether or not that position would be  
4 retained but, at the moment, it's set for a three-year  
5 time span.

6 In terms of going forward, the role that  
7 she performs is retained by station engineering, so it's  
8 augmenting the station engineering role, but station  
9 engineering does perform that function.

10 **MEMBER McDILL:** Thank you. And two ---

11 **THE CHAIRMAN:** Sorry, did I understand  
12 correctly that after this hearing of Day 2 you no longer  
13 need manager of regulatory affairs? Just trying to check.

14 **MR. JAGER:** Glenn Jager, for the record.

15 No, we require a manager of regulatory  
16 affairs; it just will not be Donna. Donna will be moving  
17 on to other things, but Richard McEacheron is the DLA.

18 **THE CHAIRMAN:** Thank you.

19 Dr. McDill.

20 **MEMBER McDILL:** Thank you. On page 61 of  
21 OPG's document, there is a reference to the use of lean  
22 and it just sort of sits there along with -- how do you  
23 expect lean methodology to help you out? Presumably you  
24 have already eliminated most of the wastes over the last  
25 few years trying to get to where you are, so I'm curious

1 as to how OPG processes will be advanced with lean?

2 **THE CHAIRMAN:** What page are we looking at?

3 **MEMBER MCDILL:** Page 61, just underneath  
4 Figure 2 in Continuing Improvement.

5 **MR. JAGER:** Glenn Jager, for the record.

6 The lean process is something that we use  
7 as part of continuous improvement, so our work is never  
8 really done there. We continually re-evaluate our  
9 processes as they are developed and introduced. There are  
10 changes that are brought through industry benchmarking and  
11 other areas, and we use the lean process as a process  
12 that's been utilized elsewhere in the industry to  
13 streamline processes, simplify them and reduce waste.

14 It's important to note that by streamlining  
15 processes it actually makes them simpler and therefore  
16 safer to execute by our staff. So it has an additional  
17 safety benefit as well.

18 **MEMBER MCDILL:** Thank you. I had not seen  
19 it in previous documents so maybe I just missed it  
20 previously.

21 I know that continuous improvement has been  
22 ongoing but the actual incorporation of lean was something  
23 I hadn't seen in OPG's documents before.

24 My last question is, with respect to the  
25 aging management strategy plan which staff currently has,

1 I believe; it's in its document on page 83. That report  
2 is currently under review. The note says "recently  
3 received" but I think it was actually submitted in  
4 September so my question would be staff. Will we have the  
5 results of staff's review by Day 2? It's at the bottom of  
6 page 83:

7 "The licensee has recently issued an  
8 update  
9 of the AMSP."

10 **MR. LAFRENIÈRE:** Ken Lafrenière, for the  
11 record.

12 Yes, to answer the question, we will have  
13 the review done and an update for Day 2.

14 **MEMBER McDILL:** Thank you, Mr. President  
15 for round one.

16 **THE CHAIRMAN:** Thank you.

17 Dr. Barnes, please.

18 **MEMBER BARNES:** Thank you, Mr. President.

19 I have some specific -- but I'd just like  
20 to start with maybe a question and you can rule me out of  
21 order, Mr. Chair, if this is out of the range of what we  
22 are here for today.

23 Obviously, we are looking at renewing the  
24 licence of Pickering A, but it seems to me that certainly  
25 within Ontario there are issues of new bills of

1       decommissioning, of waste disposal, and the whole many  
2       issues around those three significant developments for the  
3       nuclear industry. Certainly they're a concern to a large  
4       proportion of the population, as well as our politicians,  
5       in providing adequate energy supplies for the province.

6                 So the two Pickering sites, A and B, have  
7       been a mainstay of providing energy for the province for  
8       quite some time and here we are within a decade or 15  
9       years of essentially seeing both of them shut down, and  
10      yet we see almost no information on that in these  
11      documents. In fact, particularly for OPG you sort of --  
12      apart from one-and-a-half pages or two pages of general  
13      information, we plunge right into the detail.

14                So I guess I have to question whether as  
15      part of the process that we're engaged in today,  
16      recognizing this is one component, the renewal of  
17      Pickering A; that Pickering A is in some ways linked to  
18      the development of Pickering -- the ongoing development of  
19      Pickering B -- shouldn't be receiving more information  
20      about how we're dealing with the aggressive -- I'll say --  
21      decommissioning of these plants and specifically of  
22      Pickering A.

23                In the longer-term, members of the public  
24      might be concerned about why are these plants being shut  
25      down. So maybe I can just start this a series of

1 questions to be raised.

2 But why is Pickering A going to be  
3 essentially shut down as we see it now in the mid-2020s;  
4 for what reasons?

5 **MR. TREMBLAY:** For the record, Pierre  
6 Tremblay.

7 The announcement yesterday with regards to  
8 Pickering entering its last decade really is an issue  
9 around economics of potential refurbishment of Pickering  
10 B. Pickering A Units 1 and 4 were taken out of operation  
11 in 2000 -- in 1997 and brought back online in '03 and '05.  
12 There is no possibility of refurbishing those units and a  
13 decision was made a number of years ago not to proceed  
14 with the refurbishment of Units 2 and 3.

15 The issue is essentially an economic one  
16 from our perspective. The Pickering B plant is operating  
17 very well. We've had discussions around the plant, but  
18 the reality is that these are smaller units and, from an  
19 economic standpoint, the decision has been made to put our  
20 energy elsewhere.

21 So having said that, certainly for the next  
22 five years, the focus on Pickering A, which is the subject  
23 of this discussion, will be continued improvement in  
24 operation, a continued drive to equipment higher  
25 reliability and putting a reliable product on the table.



1                   In fact, as we look forward over the next  
2 decade, it will be important to the province and to the  
3 energy needs of the province to have a highly reliable  
4 Pickering site which will generate 3,000 megawatts of  
5 energy which will permit for the refurbishment of other  
6 reactors in the province, leading to a transition to  
7 hopefully new technology beyond that.

8                   So that really is the focus of our  
9 attention. Pickering B, as I indicated, is a very  
10 reliable plant. It's gone through a reliability  
11 improvement initiative. You'll recall the 85-5 program;  
12 that's certainly bearing fruit.

13                   Pickering A is likewise on the same path  
14 using the same methods, same techniques, bringing focus on  
15 reliability that will bring those two operating reactors.  
16 We're confident in our reliability, so that's really the  
17 focus of our attention and the focus of the next ten years  
18 for us.

19                   **MEMBER BARNES:** If I can give it in simple  
20 terms, if their life is of the order -- we can focus on  
21 Pickering A if you like. Still the message is that after  
22 a decade or 15 years from now it is going to be shut down,  
23 presumably for reasons that you cannot maintain its  
24 operation in an efficient or value-for-money operation.

25                   It must raise issues of reliability and of

1 safety, the fact that you are needing to shut it down at a  
2 time like that?

3 **MR. TREMBLAY:** For the record, Pierre  
4 Tremblay.

5 Pickering A is a safe plant. Over the  
6 licensing period, there were a number of issues that  
7 impacted on its reliability. The ISTB, which has been the  
8 subject of some discussion already, mitigating actions  
9 were taken. That was a significant undertaking. It  
10 resulted in a number of months of unavailability of the  
11 two units.

12 But as Glenn indicated, the plant will come  
13 back from a VBO and those units will be returned with the  
14 permanent fix and, so that's a very good news story for  
15 the plant and the organization.

16 Secondly is that a number of liquid zone  
17 control problems as well have now been resolved and we  
18 have high expectation of the units and the plant being a  
19 reliable and dependable producer of electricity for the  
20 province and for the people.

21 I would say that the issue for us is one of  
22 where we place our energy and effort and has nothing to do  
23 with the safety case. We've discussed the adequacy of the  
24 margins, the safety of the plant and the focus by the  
25 leadership on increased plant reliability.

1                   The issue of Pickering A beyond, if you  
2 will, Pickering B will be addressed and dealt with through  
3 the operational plan that we've committed to the  
4 Commission later this year, and perhaps at that time be  
5 able to provide more specifics around how we will manage  
6 the operation of the Pickering site.

7                   But just to reiterate there is no safety  
8 issue here. The plant is safe. Both Pickering A and B  
9 have demonstrated significant improvement over the last  
10 number of years, and that's not by mistake, it's through a  
11 lot of hard work and effort and focus on industry  
12 benchmarks and a lot of increased energy.

13                   In fact, the decision around Pickering B to  
14 extend the normal life will require a further investment  
15 of \$300 million by the company to assure ourselves that  
16 the facility can operate for nominally an additional four  
17 years.

18                   **MEMBER BARNES:** But is there a high-level  
19 document that would cover this next decade of what I would  
20 see as transition that the public or the Commission would  
21 be able to see that actually puts this in the context of  
22 safety?

23                   Because it must call into question, even if  
24 -- I understand here. I'm not calling into question that  
25 this is not safe, all right. Let's put it there. On the

1 other hand, I am saying that when you're shutting down  
2 these very, very significant facilities it will raise --  
3 and I'll come to public information in a minute. It will  
4 call into question whether -- just as we're seeing in the  
5 NRU a reactor that's very old and starting to have some  
6 problems and -- you know, at what point do you shut it  
7 down; what point do you invest more money? Those  
8 questions are going to come up.

9 And I'm asking the question when is the  
10 appropriate time in the licensing process, not just to  
11 take this sort of five-year increment to discuss it there,  
12 but to put it in the context that we are now two licence  
13 periods, or three maybe, away from shutting down this  
14 facility, all right, a very, very substantial facility,  
15 and it's linked to Pickering B, which you've just told us  
16 that that's going to be closed down.

17 When do we see a front end to these  
18 documents that actually put it in the wider context and  
19 therefore I will ask questions -- you know, how is the  
20 CNSC staffing up to actually manage that process as  
21 opposed to let's just manage the next five years, we've  
22 shown the last five years is reliable, the next five years  
23 is fine. But there must be a bigger picture here that is  
24 -- I think it's just not being in a sense discussed and it  
25 seems to be that we have a responsibility to put it in

1           this context and discuss it as such.

2                           **MR. TREMBLAY:** For the record, Pierre  
3 Tremblay.

4                           The commitment that we made to the  
5 Commission with regards to an operational plan for the  
6 Pickering site will certainly acknowledge and recognize  
7 the artefacts of fitness for service which we're required  
8 to demonstrate on an ongoing basis.

9                           In a nuclear industry you can't aim for  
10 mediocre. You need to strive for standards of excellence,  
11 and this is what we are doing. Pickering A, as a  
12 facility, has seen significant improvement in performance  
13 and we're committing to continued investment and effort  
14 towards that.

15                           In terms of what more we can put on the  
16 table in terms of the longer term, I think it's important  
17 to note that it's not only beyond the next licensing  
18 period but likely if we go with five-year licenses it will  
19 be beyond that as well.

20                           But I appreciate and understand the  
21 comments you're making.

22                           Perhaps the staff would care to comment.

23                           **THE CHAIRMAN:** Let me jump right in here.

24                           I think there's a more generic question  
25 being asked, and that is how you define end of life. And

1 I understand that staff is working on a regulatory  
2 guidance on what does end of life mean. Forget about A,  
3 B, NRU; it applies everywhere. And you want to fill in  
4 the blank here because I understand there is a document  
5 that actually will try to deal with when does it make  
6 sense to start worrying about end of life.

7 **MR. JAMMAL:** Thank you, Mr. Chair. For the  
8 record, Ramzi Jammal.

9 There are a couple of points I would like  
10 to make at the high level and then I will pass it on to  
11 Mr. Schaubel for the details.

12 You are correct, we are working on end of  
13 life management as part of our experience with integrated  
14 safety review and refurbishment, which is looking at a  
15 periodic -- excuse my word -- a safety review by which we  
16 establish the main elements that will be addressed with  
17 respect to the end of life plan.

18 So as part of the refurbishment regulatory  
19 guide or the guidance, we are working currently on the end  
20 of life plan. However, with our experience with OPG an  
21 integrated safety review has highlighted future plans that  
22 we will be not reinventing the wheel but capitalizing on  
23 the information we currently have.

24 I will pass you on to Mr. Schaubel with  
25 respect to the details.

1                   **MR. SCHAUBEL:** For the record, Tom  
2                   Schaubel.

3                   As part of the Pickering B relicensing,  
4                   which was in 2008, we asked OPG to submit an end of life  
5                   plan, which was scheduled to be submitted to us by the end  
6                   of this year, by December, which they've asked to submit  
7                   later in the year. I believe they said a draft in March  
8                   and later in September. They will submit a very detailed  
9                   plan based now on the decision yesterday on what they will  
10                  be doing toward the end of life.

11                  Another couple of areas; we have just gone  
12                  through this integrated safety review for the Pickering B  
13                  refurbishment on the work that would be required to  
14                  refurbish it for the next 30 years, which they won't be  
15                  doing. But the work we did with that -- a big part of  
16                  that was condition assessments. So we know the condition  
17                  of that plant. Pretty well all of the components, we went  
18                  through that.

19                  Just one other point is the life expectancy  
20                  for these plants is really dependent on the major  
21                  components, the pressure tubes, the feeders and the steam  
22                  generator tubes. There's a finite date and I believe  
23                  that's starting for Pickering B in 2014, where that's the  
24                  end of life date, unless they change some of those  
25                  components.

1                   They can change those components and extend  
2 the life, which is, I believe, what they're going to be  
3 doing to some extent. They could change all the  
4 components and extend it to 2060.

5                   So what's really governing the end of life  
6 are those major components. And there are code  
7 requirements and there's required thicknesses for these  
8 components, and when they reach or get close to that  
9 required thickness they have to shut down. So really  
10 that's the basis for the end of the life.

11                   **MEMBER BARNES:** And I understand that, but  
12 we're being told that that appears not to be happening in  
13 terms of refurbishment.

14                   And so one of the four cornerstones in  
15 there as a principle in operating was value for money,  
16 right, which you can read in a number of ways, and you can  
17 read at one point there's no point in continuing to  
18 invest.

19                   So again you've just told us that you're  
20 going to spend \$300 million pushing the life expectancy of  
21 Pickering B.

22                   But again, at the certain point one might  
23 expect members of the public to think that at a certain  
24 point as you end -- towards the end of the life of a plant  
25 you're not going to keep pouring more money into it. And



1 so it's these aspects that I think need to be openly and  
2 transparently discussed and so on.

3 Let me just -- for example, one of the  
4 cornerstones was safety, excellence and safety, and yet  
5 one of the three areas that were below expectations was  
6 safety culture, which was a surprise in that safety  
7 culture -- of that realization, if you like, that was  
8 brought out by an assessment initiated by CNSC staff as  
9 opposed to the licensee.

10 So why wouldn't the licensee have  
11 understood that the level of safety culture was below  
12 expectations out of the licensing process? That's a  
13 question to OPG obviously.

14 **MR. JAGER:** Glenn Jager, for the record.

15 Yes, we received the CNSC assessment in  
16 that area and it's a good assessment and for the most part  
17 agreed with our own assessments in safety culture.  
18 However, it did identify some areas that we needed to  
19 improve upon.

20 And that really is the value of safety  
21 culture assessments. It surfaces issues that we can then  
22 focus on and address and improve the overall safety  
23 culture of the plant, not just the CNSC safety culture  
24 assessments but also the numerous other safety culture  
25 assessments that we perform.

1 I'll ask Mark Elliott to add further detail  
2 to that.

3 **MR. ELLIOTT:** For the record, Mark Elliott,  
4 Senior Vice-President, Inspection Maintenance and  
5 Commercial Services and, up until recently, Senior VP for  
6 Pickering A.

7 We do safety culture assessments internally  
8 every three years and we had done several over the last  
9 few years and taken action to improve. This most recent  
10 one identified strengths and areas for improvement. That  
11 was not a surprise. Assessments will normally do that and  
12 they're appreciated. We appreciated that assessment being  
13 done because it helps us with our continuous improvement.

14 Some things that were pointed out in that  
15 assessment this past year that the influences of actions  
16 from the ISTB event were evident from the team's  
17 interviews and observations. So the work we did after the  
18 ISTB was recognized by the assessment that multiple  
19 mechanisms exist to communicate the value of safety  
20 through the organization. There were quite a few positive  
21 observations and we took heart from that in the  
22 assessment.

23 Of the findings, there were six main  
24 findings and the vast majority of those were areas we were  
25 aware of and we had taken action on already. I'll just

1 highlight one of them, being the accountability area.  
2 This is an area where we expect our managers and our staff  
3 to step up and, in our words, say it and do it. Where  
4 they see a problem, they say what they're going to do  
5 about it and they do it.

6 That was an issue that the assessment found  
7 but we had found that ourselves and we were on to it  
8 already and had been working on it. So we appreciate the  
9 input. There was definitely value added for us to improve  
10 further but in large measure we were on top of those  
11 issues and improving those issues.

12 **MEMBER BARNES:** Yes, I was surprised at  
13 that since OPG has been before us so many times and saying  
14 safety, safety, safety. It's a number one issue and then  
15 to find it's below expectations is concerning.

16 Under the minimum shift complement again on  
17 page 46 of the staff CMD, they note that OPG did not  
18 control or monitor the status of minimum staff complement.  
19 Could you explain why that was not done by OPG?

20 **MR. JAGER:** Glenn Jager, for the record.

21 Minimum shift complement is controlled and  
22 monitored every shift. That's done through supervisory  
23 oversight, first of all on the personnel that they're  
24 accountable for to meet the minimum complement. The shift  
25 manager, senior licensed person on shift, is accountable

1 overall for the minimum shift complement in the station at  
2 all times.

3 We additionally have improved our tracking  
4 of that. I think that was a feedback that we received  
5 that we needed to be able to track that and be able to  
6 report more accurately on that. We've installed a minimum  
7 complement control program which tracks the movement of  
8 personnel inside, in and out of the station at any moment  
9 in addition to their qualifications to meet the  
10 requirements of filling the minimum complement positions  
11 that they work.

12 So in summary, we meet our minimum  
13 complement at all times. There's positive assurance of  
14 that from the supervisors of the accountable work group  
15 and the shift manager. They are accountable to the shift  
16 manager on shift at all times.

17 Additionally, we have the minimum  
18 complement program which we can track and demonstrate our  
19 compliance at all times.

20 **MEMBER BARNES:** So do staff -- I guess I  
21 misread the statement, which seemed pretty black and white  
22 to me. Is it essentially a tracking issue or is it  
23 something more serious?

24 **MR. LAFRENIÈRE:** Ken Lafrenière, for the  
25 record.

1                   Yes, by necessity we can't put all the  
2 information we do in our inspections into the Commission  
3 member documents. So Mr. Jager's summary of that action  
4 notice is quite correct. In 2006 the audit revealed that  
5 they couldn't demonstrate that, not that it was in  
6 jeopardy but they were asked to demonstrate it so that  
7 we'd be satisfied, recognizing that our requirements and  
8 standards are very high in those areas.

9                   In 2008 they implemented the compensatory  
10 measures and now they're able to demonstrate the means  
11 that Mr. Jager has just elaborated on.

12                   **MEMBER BARNES:** Okay, and one area which  
13 I'm not just fully understanding and that's the third area  
14 that was below expectations -- the inter-station transfer  
15 bus where you're essentially depending on power from  
16 Pickering B to support Pickering A. What happens then if  
17 Pickering B closes before Pickering A in terms of the  
18 inter-station transfer of bus power?

19                   **MR. JAGER:** Glenn Jager, for the record.  
20                   Is your question relating to the longer-  
21 term operation or current operation?

22                   **MEMBER BARNES:** No, obviously it's okay for  
23 the current one and it would have been of more concern  
24 with Pickering closing in the 2-14 to 2-16, which would  
25 have been in this next licence period for Pickering A. As

1 of the announcement yesterday, Pickering B looked as  
2 though it's extending somewhat.

3 But again, it's still an issue that at the  
4 moment, as of today, Pickering A continues longer than  
5 Pickering B. So I'm asking what would be the situation in  
6 regard to the inter-station transfer bus and that power  
7 transfer, if Pickering B closed ahead of A.

8 **MR. JAGER:** Glenn Jager, for the record.  
9 Pickering A receives its supply from the Pickering B  
10 electrical arrangement and the unit does not need to be  
11 actually operating. Pickering B has its own supply from  
12 the grid as well as its own standby supplies which are  
13 capable of supplying the buses that the ISTB draws power  
14 from.

15 So as long as those buses remain available  
16 and powered by Pickering B then that's sufficient for the  
17 ISTB for Pickering A operation.

18 **MEMBER BARNES:** Okay, thank you.

19 **THE CHAIRMAN:** Thank you.

20 Mr. Graham.

21 **MEMBER GRAHAM:** Thank you. Some of my  
22 questions were answered through Dr. Barnes' questioning  
23 but I guess I have a couple, one with plant life  
24 management.

25 CNSC staff, on page 81, they were quite

1 explicit and said:

2 "Pickering NGS A Units 1 and 4 are the oldest operating  
3 CANDU reactors in Canada. While there are extensive  
4 replacement components for return to service there is  
5 still a significant amount of original equipment which is  
6 subject to aging."

7 My question to OPG is, first of all, in  
8 yesterday's announcement I believe there were -- it was  
9 indicated there would be about \$300 million allocated to  
10 Pickering B to the extension of life, or whatever it might  
11 be called, until it is decommissioned. But there was no  
12 mention as to what type of capital expenditures might be  
13 done at Pickering A.

14 And my question really is, in this  
15 licensing period for the next five years are there any  
16 components that are reaching 40 years-plus of age within  
17 this period of time that weren't replaced at the refurb or  
18 at the start-up back in the early 2000s that will need to  
19 be done? And what is your planned capital expenditure for  
20 Pickering A in the next five years?

21 **MR. JAGER:** Glenn Jager, for the record.

22 For Pickering A, all our major components,  
23 boilers, pressure tubes, feeders, et cetera have a life  
24 cycle management program in place. The Pickering B  
25 announcement really does not impact on those management

1 programs. We operate those systems and those components  
2 to meet all the required safety targets and fitness for  
3 service requirements.

4 The capital investment and the investment  
5 in the plant is commensurate with meeting those fitness  
6 for service requirements and system availability  
7 requirements. It really does not change it through the  
8 licensing period.

9 Over the years we've made significant  
10 capital investment in Pickering A. There are a number of  
11 systems that have been replaced and are new. For example,  
12 going back to our channels, we actually have the newest  
13 fuel channels in the CANDU fleet at the moment that are in  
14 operation.

15 Another example would be our service water  
16 systems. Our service water -- high-pressure service water  
17 pumps are new. They've been replaced with new strainers.  
18 Most of our pressure service pumps are new and in addition  
19 we just placed in service four diesel-powered firewater  
20 pumps on Pickering A. So, in essence, our cooling water  
21 systems again are one of the newest in the fleet. So  
22 there is a program to replace components, major  
23 components, based on the aging management of programs that  
24 we have in place and our capital program is set  
25 commensurate with that.



1           I would ask Robert Black, our Director of  
2           Engineering, just to comment on the size of our capital  
3           program and what's currently involved there.

4           **MR. BLACK:** For the record, Robert Black,  
5           Director of Station Engineering.

6           Glenn is correct. All our major components  
7           have specific life cycle management plans; feeders, fuel  
8           channels, boilers and reactive components, for example.

9           The yearly budget is about \$12 million  
10          plus. We've also made a substantial investment in the  
11          Calandria Vault inspection program of \$25 million just to  
12          look at those specific life limiting components. And  
13          there's a plan, this current outage, spring outage in Unit  
14          1, to execute that plan for Calandria Vault inspection.

15          We have a \$10 million equipment reliability  
16          program at the site which we talked about earlier; we are  
17          running from 2008 through to 2011-12. It includes  
18          preventive maintenance, optimization, equipment  
19          reliability, restoration, modifications, such as state of  
20          cooling systems and a pump and motor strategy.

21          Not only that, we continue to invest into  
22          Pickering A through the project and modifications  
23          portfolio of about \$10 million a year as well into  
24          Pickering A.

25          So that basically is our capital investment

1 program.

2 **MR. JAGER:** Glenn Jager, for the record.

3 So, in summary, in my presentation, we  
4 predicted the service date for Pickering A to be well into  
5 the mid-2020s -- was the time period that we quoted.

6 **MEMBER GRAHAM:** Yes. I guess what I was  
7 looking for was, have you identified any major items? I  
8 know \$10 million sounds like a lot, but in the size of the  
9 plant and what it costs to refurb Pickering A-4, 10  
10 million isn't a lot.

11 Are there any major components that will  
12 need replaced during -- replaced or rebuilt or so on  
13 during this licensing period?

14 **MR. BLACK:** Robert Black, for the record.

15 Yeah, I mean, there's the feeder program,  
16 the pressure tube program or pressure tubes, as alluded to  
17 earlier are the best in the fleet right now, so there's no  
18 issues there. We have a feeder lifecycle management plan,  
19 which looks at feeders for thinning and other degradation  
20 methods, and we are tracking that very well.

21 The conservative measures, 50 to 70  
22 feeders, will need to be replaced over the next 5 to 10  
23 years. So that is in our base plans for outages.

24 The boilers are in good shape and we manage  
25 them as well through a comprehensive, integrated life-

1 cycle management plan, and all the degradation methods are  
2 being tracked there as well.

3 **MR. JAGER:** Glenn Jager, for the record.

4 I would say the answer is no, in summary,  
5 and however that reliability improvements that will  
6 continue to drive may identify further investment required  
7 to reach the standards of excellence that we're talking  
8 about.

9 **MEMBER GRAHAM:** And that pillar of value  
10 for money or value for investment will not drive the  
11 decision if something major is needed to be done?

12 **MR. JAGER:** Glenn Jager, for the record.

13 That's correct. The standards and  
14 operating standards that we apply to the facility are not  
15 relaxed; they are not reduced. They are benchmarked and  
16 set for excellence and our investment in our programs and  
17 our plans are set commensurate with that standard.

18 **MEMBER GRAHAM:** On another line of  
19 questioning ---

20 **THE CHAIRMAN:** Can I take you back on that  
21 question then?

22 **MEMBER GRAHAM:** Sure.

23 **THE CHAIRMAN:** Then I'm trying to  
24 understand what's reasonable to expect for Day 2, and  
25 that's relating to the end of life discussion.

1                   Is it reasonable to expect that during the  
2 five-year licence you will start worrying about end of  
3 service because you said that the end of service is  
4 probably 2020, which is only 10 years from now? So when  
5 does one start worrying about this and if the answer is  
6 yes, when can one get a good, high-level kind of milestone  
7 picture associated with end of life planning?

8                   **MR. TREMBLAY:** Pierre Tremblay, for the  
9 record.

10                   As committed at the end of last year, we  
11 will have a high-level operational plan which will  
12 generally scope out the work to be done and the operating  
13 scheme, if you will, for the Pickering site, and we will  
14 provide a more detailed plan at the end of September.

15                   So certainly Day 2 is in May. That should  
16 be in-hand of the staff, and we will have an occasion to  
17 dialogue around that. And so I would say that the value  
18 of decision-making and moving forward is it allows us to  
19 solidify our plans with regards to staffing and investment  
20 and so forth. And so that will be an emerging picture  
21 over the next numbers of years.

22                   But in terms of the site, we will have a  
23 high-level plan by the end of March.

24                   **THE CHAIRMAN:** I thought the high-level  
25 plan was for Pickering B. I didn't -- you're suggesting

1 that there will be also such a plan for A?

2 **MR. TREMBLAY:** Broadly speaking, we will  
3 address the site, that is correct.

4 **THE CHAIRMAN:** And will that be available  
5 for Day 2 or that's too early?

6 **MR. TREMBLAY:** For the record, Pierre  
7 Tremblay.

8 We've asked that a high-level plan -- or  
9 we've committed to a high-level plan by the end of March.  
10 So that will be available for Day 2.

11 **THE CHAIRMAN:** Thank you.

12 Mr. Graham.

13 **MEMBER GRAHAM:** Thank you. My other line  
14 of questioning is with regard to staffing, minimum shift  
15 complement and so on, and CNSC staff had some very good  
16 points that they brought forward in their document.

17 My first question is how many overtime  
18 hours in that sector is being applied right now to staff?  
19 Are staff working overtime hours or not or do you have  
20 sufficient staff to fill every complement without people  
21 being worked an extra so many hours a day?

22 **MR. JAGER:** Glenn Jager, for the record.

23 Yes, staff does work overtime. It's  
24 primarily to provide for vacation relief and unforeseen  
25 absences such as sick time.

1           Typically, our overtime commitment is in  
2           the order of five percent, six percent overall, but that  
3           includes plant overtime to meet plant demands and not just  
4           minimal complement. However, overtime is applied  
5           periodically for minimum complement; not always. We  
6           sometimes shift change or reassign personnel from days to  
7           provide for minimum complement, especially when the  
8           absence occurs on a day shift.

9           **MEMBER GRAHAM:** Question to CNSC staff.

10           Do you monitor that to ensure that there  
11           isn't excessive overtime that's not being worked that  
12           might jeopardize safety?

13           **MR. SCHAUBEL:** For the record, Tom  
14           Schaubel.

15           There is an hours-of-work requirement, and  
16           I think I will turn this over to Mr. André Bouchard to  
17           discuss the hours of work and the issues with that at  
18           present. Thank you.

19           **MR. BOUCHARD:** André Bouchard, for the  
20           record.

21           Yes, CNSC has identified its requirement as  
22           far as hours of work are concerned and shift scheduling as  
23           well, and that would apply to all the plants -- all the  
24           workers of the plant, yes.

25           **MEMBER GRAHAM:** And in the last five years,

1 this has not been exceeded?

2 **MR. BOUCHARD:** Hours-of-work is  
3 occasionally exceeded and it's part of the reporting  
4 requirement under S99, where the licensee must report.

5 A key important point is that the safety of  
6 the plant has to be assumed and that's the relationship  
7 with the minimum shift complement. The licensee must  
8 ensure that there always at all times is sufficient  
9 minimum complement. So hours of work may be exceeded on  
10 an occasion per se in order to maintain minimum  
11 complement.

12 **MEMBER GRAHAM:** My other question is, what  
13 is the policy with regard to whistleblowers within OPG at  
14 Pickering A?

15 **MR. JAGER:** At Pickering A and within OPG,  
16 we have a number of means whereby employees can surface  
17 concerns or raise issues. One is, and first and foremost,  
18 are our condition reports. Employees can submit concerns,  
19 identify issues through conditional reports and they can  
20 do that without identifying themselves.

21 Additionally, we have an ombudsman who is  
22 available that, again, they can raise issues or concerns  
23 without identifying themselves to management, and we are  
24 required to respond to their concerns.

25 They also have a number of avenues

1 available through their union representation. They can  
2 also use a union representation. Joint Health and Safety  
3 Committee has employee representatives who -- they can  
4 also raise concerns and issues through those avenues as  
5 well.

6 So there's a number of means by which  
7 employees can identify issues, concerns and problems to  
8 OPG.

9 **MEMBER GRAHAM:** Another question is ---

10 **THE CHAIRMAN:** Can I come back on that one?

11 **MEMBER GRAHAM:** Yes.

12 **THE CHAIRMAN:** Sorry. Will then -- given  
13 this kind of -- all kind of different processes available  
14 to staff, if I understand correctly, the CNSC culture,  
15 safety culture observation was that there's room for  
16 improvement in staff reporting up the line without fear of  
17 repercussion. How does one reconcile their observation  
18 and your processes?

19 **MR. JAGER:** Glenn Jager, for the record.

20 Yes, that was identified in the CNSC  
21 assessment.

22 I think I'd just like to begin with my own  
23 personal position on that. First and foremost, I believe  
24 that 100 percent of the employees, or any employee working  
25 for the facility, should be able to raise a concern in a



1 blame-free environment. Furthermore, I believe that  
2 supervisors should encourage that and respond  
3 appropriately. And, finally, as a company, I believe that  
4 we're committed to respond and communicate effectively to  
5 those individuals and to all the workers at the site what  
6 our response has been and the necessary follow-up.

7 In the assessment, they did identify a  
8 portion of the organization that felt that they could not  
9 raise concerns in a blame-free environment. I do think  
10 it's important to note that the assessment also identified  
11 that personnel valued safety highly and that they would  
12 raise concerns regardless of any possible outcome.

13 So that's a very important underpinning of  
14 the safety culture at Pickering A and in OPG. I think our  
15 performance bears that out. If you look at the safety  
16 performance, both conventional and radiological for safety  
17 performance, many of those gains have been achieved by  
18 individuals raising safety concerns, identifying issues  
19 that we've acted on and corrected. Sometimes they come  
20 forward directly and do that. Sometimes they do that  
21 through the various means that I spoke of. In all, it's  
22 used effectively to improve the safety at the facility.

23 There's a few other examples. The ISTB is  
24 an example where a concern about the operation surfaced  
25 and the company acted appropriately to put the units in

1 the safe state and ultimately resolve that issue.

2 **THE CHAIRMAN:** But are you going to do  
3 something new to try to deal with the observation of CNSC?

4 **MR. JAGER:** Glenn Jager, for the record.

5 Yes, absolutely. We initiated discussions  
6 with those groups. We did find that situation did exist  
7 with some of the smaller groups within the station. We've  
8 started dialogue with those groups and working with the  
9 supervisors to reinforce the expectation, our expectation,  
10 my expectation, in terms of how we handle employee  
11 concerns, and we're continuing to work to improve that  
12 area in those particular groups.

13 So, yes, it was good feedback from the CNSC  
14 assessment. We're using that, and we've started dialogue  
15 with those groups and we'll continue to communicate and  
16 work with the supervisors on that.

17 **THE CHAIRMAN:** Thank you.

18 Mr. Graham.

19 **MEMBER GRAHAM:** Just two more points.

20 On page 45 of staff's document regarding  
21 minimum shift complement -- and I know it's been addressed  
22 -- but to get this clear in my mind, in that second-last  
23 paragraph -- and you're referring to common modes of  
24 events such as fire, seismic events and basic design  
25 accidents, and it said:

1 "In 2008, CNSC staff advised OPG that they had not yet  
2 provided sufficient documented evidence that the minimum  
3 complement numbers are adequate to deal with common mode  
4 of events at Pickering."

5 Is that now been addressed? And I guess  
6 that would be to CNSC staff.

7 **MR. JAMMAL:** For the record, Ramzi Jammal  
8 I will pass on the detail to Mr. Bouchard,  
9 but I would like to give assurance to the Commission with  
10 respect to the modelling of the analysis of the minimum  
11 shift complement.

12 CNSC staff is satisfied with respect to the  
13 minimum shift complement with respect to a single unit  
14 incident or accident; the minimum shift complement where  
15 it's taking into consideration multiple units shutdown.

16 I will pass it on to Mr. Bouchard.

17 **MR. BOUCHARD:** Yes, it's actually being  
18 addressed and progress is being made -- monitored -- and  
19 we are in regular exchanges and monitoring work being  
20 done.

21 It's a bit long as a progress from a  
22 standpoint that it's a complicated work, including  
23 validation and verification of a lot of procedures, but  
24 that is being done and in compliance with the RD323  
25 documents.

1                   **MEMBER GRAHAM:** So on Day 2 will you be  
2 providing us with a further update on the progress of  
3 this?

4                   **MR. LAFRENIERE:** Ken Lafrenière, for the  
5 record.

6                   Yeah, we certainly will provide the  
7 Commission with an update on that.

8                   And I'd like to point out perhaps a point  
9 that was missed in some of the answers there. These  
10 reviews, such as minimum shift complement, are ongoing  
11 reviews that occur periodically. We mentioned that Units  
12 2 and 3 are being placed in a safe storage state. That  
13 would necessitate a review of the accident scenarios that  
14 drive the minimum shift complement numbers.

15                   As Mr. Jammal mentioned, there is no safety  
16 risk to the plant. There is adequate staff in place  
17 currently. These numbers will be reviewed and that will  
18 be confirmed by the validation exercise that Mr. Bouchard  
19 just spoke to, and we will update the Commission in Day 2.

20                   **MEMBER GRAHAM:** And I just have one further  
21 question for this round, Mr. Chair.

22                   And that is grievances, union grievances,  
23 and so on that relate to safety issues. At any given time  
24 how many grievances would you have?

25                   **MR. JAGER:** Glenn Jager, for the record.

1 I don't have that number at this time but I  
2 can provide it to you.

3 **MEMBER GRAHAM:** For Day 2 perhaps we could  
4 get that -- grievances -- and how many are related to  
5 safety issues, people refusing to do something because of  
6 a safety issue or something?

7 **MR. JAGER:** Okay. So I understand  
8 correctly, you're not talking about work grievances per se  
9 but issues raised regarding safety?

10 **MEMBER GRAHAM:** Not as interested in work  
11 grievances that do not pertain to safety, but anything  
12 that pertains to safety I'd like to know if there are  
13 listings.

14 **MR. LAFRENIERE:** Ken Lafrenière, for the  
15 record.

16 Just to clarify on your point, Commissioner  
17 Graham. Any work refusal is brought to the joint health  
18 and safety committee at the facility, so they'll have  
19 numbers on that also.

20 **MEMBER GRAHAM:** It will be helpful, and to  
21 have a breakdown of what those are and so on.

22 That's all this round, Mr. Chair.

23 **THE CHAIRMAN:** I think it's a good time for  
24 us to take a short break; 10 minutes, 15 minutes. Why  
25 don't we make it -- we'll reconvene at 3:30.

1 Thank you.

2 --- Upon recessing at 3:13 p.m./

3 L'audience est suspendue à 15h13

4 --- Upon resuming at 3:35 p.m.

5 L'audience est suspendue à 15h35

6

7 **THE CHAIRMAN:** Sorry, we are a bit late.

8 You want to add something? Go ahead.

9 **MR. JAGER:** Glenn Jager, for the record.

10 I have a response for Commissioner Graham's  
11 question. I apologize; I misunderstood when you mentioned  
12 grievances.

13 For safety issues, really there's two  
14 avenues whereby safety grievances, as you call them, are  
15 raised. One is through our worker concern and work  
16 refusal process. So any worker at any time can refuse  
17 work or identify a worker concern. And that's promptly  
18 dealt with.

19 It has a process where the supervisor first  
20 deals with it. It's escalated to a joint health and  
21 safety and manager and ultimately they can engage the  
22 Ministry of Labour to rule on that if necessary.

23 The second avenue is through the Joint  
24 Health and Safety Committee and they do identify concerns  
25 and if they see a lack of progress or it's a concern of

1 immediate issue to them, they can issue a stop-work  
2 associated with that. They also have 21 day  
3 recommendations whereby they inform the employer, OPG, of  
4 the issue and get a response within 21 days or less.

5 I personally receive those letters and  
6 currently we have three such letters that are open and  
7 active at this time. In regard to that, we do not  
8 currently have any work refusals at this time.

9 **MEMBER GRAHAM:** Sorry I wasn't -- that was  
10 the group that I was referring to was the ones that are  
11 referred to the committee and so on.

12 You say at this present time there are  
13 three. Is that roughly what the average would be over a  
14 period of a year? And you have what -- 21 days to respond  
15 or how does that work?

16 **MR. JAGER:** When the Joint Health -- Glenn  
17 Jager, for the record.

18 When the Joint Health and Safety gives us  
19 the letter or recommendation on the safety issue, then we  
20 have 21 days to develop a response and provide them with a  
21 response. The average -- again, I'll have to get back to  
22 you on what the average is, but currently we have three  
23 such letters.

24 **MEMBER GRAHAM:** CNSC staff are copied on  
25 that, I believe; are they not?

1           **MR. JAMMAL:** Ramzi Jammal, for the record.

2                           We will verify this information, but it's  
3 not a reporting requirement. It is not a reporting  
4 requirement under the S99.

5                           **THE CHAIRMAN:** Thank you.

6                           Mr. Harvey.

7                           **MEMBER HARVEY:** Merci, Monsieur le  
8 président.

9                           First question relates to the slide 14 of  
10 your OPG's presentation. You've got the graph there  
11 "Completion of Priority Work Orders". Looking at like  
12 this, I'm not sure of the message that we can get from  
13 that. Looking at it just without any other information,  
14 one could say well, the situation deteriorates, which is  
15 not the message I think you want to give by that graph.

16                           So I suppose the graph is linked to the  
17 backlog and could you elaborate on that graph and how it's  
18 established that target lines and the -- just to give more  
19 information and then I will have another question after  
20 that.

21                           **MR. ELLIOTT:** For the record, Mark Elliott.

22                           What you heard Mr. Jager talk about is that  
23 we are following a similar reliability restoration  
24 program, reliability improvement program, as Darlington  
25 and Pickering B. And I was involved in the Pickering B



1 one and what we did is we scoped out 3,000 work orders to  
2 raise Pickering B's performance, and we completed those  
3 and Pickering B is performing well.

4 At Pickering A, we copied that process and  
5 we came up with 2,200 work orders that we needed to  
6 complete over three years to bring Pickering A reliability  
7 up. And so what you've seen there is in 2008 we did -- we  
8 kind of got the program going, but we really got it going  
9 in earnest last year, in 2009, when we did those 600.  
10 We're going to do 800 in 2010, another 800 in 2011 and  
11 that will complete the 2200 and will bring Pickering A  
12 performance to where it should be.

13 **MEMBER HARVEY:** Okay, then I just relate  
14 that your answer to the -- what -- it was on page 80 of  
15 the staff document, where I can read "the elective  
16 maintenance backlog has a range between 400 and 500 work  
17 orders" and da da da and then "this is slightly higher  
18 than the best industry performance of fewer than 250, an  
19 OPG target of 375 for the end of 2009."

20 Why is the target 375? And it is slightly  
21 higher than the best industry, but it's almost double.  
22 It's 450 compared to 250. Is it just because the others  
23 are better than OPG?

24 **MR. ELLIOTT:** Let me just clarify the  
25 difference.

1                   On the slide, these work orders are plant  
2                   reliability. There are certain work orders that have high  
3                   value for improving plant reliability and those are the  
4                   ones we're doing with that targeted program of 2200.

5                   I'll let Mr. Jager talk about the backlog,  
6                   which is a separate issue of maintenance backlog.

7                   **MR. JAGER:** Glenn Jager, for the record.

8                   Yes, the maintenance backlogs, the elected  
9                   backlogs -- those numbers are a per unit value and there's  
10                  two functions. One, we have to address the incoming work  
11                  or the work that relates to equipment, which is degrading  
12                  or failing as time goes on that comes into the backlog, so  
13                  we work that.

14                  But in the backlog itself what's necessary  
15                  is to schedule, plan the work, procure the parts. That  
16                  does take some time. So as a result, our backlog targets  
17                  ramp down over time, balancing those two priorities --  
18                  one, addressing the incoming work and two, working off the  
19                  work that exists in the backlog right now.

20                  Our goal is to drive those backlogs down to  
21                  industry excellence and each year our targets are reduced  
22                  as we accomplish more and more work in that backlog while  
23                  maintaining our ability to handle the incoming work.

24                  So we progressively reduce the targets. My  
25                  goal is to drive that down to industry best. And within

1 OPG across all our plants, what we've seen is when we  
2 bring the backlogs down, plant reliability increases. So  
3 this is a very important priority in terms of that overall  
4 improvement of reliability in a plant, these targets.

5 **MEMBER HARVEY:** Thank you. I understand  
6 now.

7 On the slide 17, the last dot -- equipment  
8 required for operating units maintain the same standards.

9 What is the nature of the equipment  
10 required once the unit is in a -- a safeguard storage,  
11 safe storage state? Sorry.

12 **MR. JAGER:** Glenn Jager, for the record.

13 The equipment on Units 2 and 3 -- a portion  
14 of that equipment is necessary for the operation of Units  
15 1 and 4. They are generally systems that -- electrical  
16 systems or systems that are tied to those units. And I'll  
17 ask Sean Granville to possibly comment in little more  
18 detail as to exactly what types of equipment is included  
19 in that suite of systems.

20 **MR. GRANVILLE:** Sean Granville, for the  
21 record, Director of Ops and Maintenance at Pickering A.

22 So like Mr. Jager stated, the major  
23 equipment on Units 2 and 3 that supports the safe  
24 operation of Units 1 and 4 is our electrical distribution  
25 systems. They are specifically identified in the field.

1 They have -- they are demarcated. They are labelled and  
2 they are maintained to the exact same standards as we  
3 would on Units 1 and 4.

4 We can give you a -- you know, there is a  
5 list of other systems; for example, instrument air system  
6 that, again, supports multiple units. There are ties with  
7 service water system. There is a heavy water detour  
8 transfer system that allows us to move heavy water across  
9 the station and of course we have a containment system.

10 Units 2 and 3 will be removed from the  
11 boundary of that containment system and in our electrical  
12 system it's a full-class system from the high-voltage  
13 systems all the way down to our low-voltage distribution  
14 systems.

15 **MEMBER HARVEY:** On page 81 of the staff  
16 document, under plant life management there is a paragraph  
17 at the end:

18 "There is still significant amount of original equipment  
19 which is subject to aging."

20 Could you just elaborate on that and just  
21 give an idea of the -- is it very important compared to  
22 the total equipment you have, the total pieces that we can  
23 have in such nuclear plant? Is it very important and what  
24 do you do about that?

25 **MR. JAGER:** Glenn Jager, for the record.

1                   We have an aging management program and  
2                   life cycle management programs for all components and  
3                   systems within the units. Those programs are benchmarked  
4                   to industry standards and follow actually fleet programs  
5                   in that regard. We use those programs to assess the  
6                   condition of those components, their performance and  
7                   expected life span and when they are -- when it's  
8                   necessary to perform preventative maintenance or  
9                   replacement as determined by the overall aging management  
10                  plan.

11                  **MEMBER HARVEY:** But what I understand by  
12                  that, you've got the aging problem starts right at the  
13                  beginning but what I understand from that there is some  
14                  part of the equipment there which would need greater  
15                  attention than the others. So this is my concern, what is  
16                  the importance of that part of the equipment?

17                  **MR. JAGER:** Glenn Jager, for the record.  
18                  Perhaps I'll ask Rob Black to provide an  
19                  example to illustrate how that program operates and the  
20                  types of equipment.

21                  **MEMBER HARVEY:** Okay, but maybe before that  
22                  I should have asked the question to the staff because it's  
23                  in their document, so they could find out what type of  
24                  equipment is under that sentence.

25                  **MR. SCHAUBEL:** For the record, this would

1 be -- what was meant by this section is the aging -- plant  
2 aging program for all of the equipment, such as heat  
3 transport pumps, which are the original pumps and these  
4 have regular maintenance, preventative maintenance and  
5 routine -- you look at these things on a routine basis to  
6 keep them up and to pristine condition. That's really  
7 what was meant by that.

8 Yes, the component may be 40 years old but  
9 they have to maintain that pretty well in pristine  
10 condition and they do that with their plant life  
11 management program and that's what that program we're  
12 looking at is for. It's for all sorts of shutdown cooling  
13 pumps, heat exchangers, primary transport pumps, that sort  
14 of thing. So they do have such a program and they have it  
15 documented -- well documented and well maintained.

16 **MEMBER HARVEY:** I understand but what do  
17 you mean by just adding that sentence there? "There is  
18 still a still significant amount of original equipment  
19 which is subject...". Does that require a specific  
20 attention or it's inside the overall aging program?  
21 That's all.

22 **MR. SCHAUBEL:** That's right. It is inside  
23 the overall aging program. They actually developed during  
24 the Pickering B refurbishment some advancements on  
25 condition assessment monitoring of individual programs

1           which they are now applying to Pickering A because really  
2           what meant by that it was just a new development they did  
3           in the refurbishment of Pickering B on their program  
4           they're transferring over to Pickering B on condition  
5           assessments.

6                           **THE CHAIRMAN:**   Okay, thank you.

7                           Mr. Tolgyesi?

8                           **MEMBER TOLGYESI:**   Merci, monsieur le  
9           président.  On page 8 of the OPG presentation is that  
10          yearly forced loss rate and could you specify was that  
11          forced loss rate its loss against the full operation or  
12          what is that?

13                          **MR. JAGER:**   Glenn Jager, for the record.

14                          Forced loss rate is when the unit is shut  
15          down and not available for service or is not producing  
16          power due to unplanned circumstances, so it could be  
17          equipment failure, it could be a de-rating of the unit.  
18          These all collectively contribute to forced loss rate for  
19          that unit for the year which is, again, looked in  
20          aggregate across the station for all units.

21                          **MEMBER TOLGYESI:**   And it means that loss  
22          rate when you say presentation, "50 per cent of the total  
23          time it's shut down", right?  That's what you mean?

24                          **MR. JAGER:**   Fifty per cent of that time  
25          that it was shut down when it should have been available

1 to operate, that's correct. It does not include planned  
2 outages.

3 **MEMBER TOLGYESI:** And on the next page you  
4 are saying that the Unit Number 1 was well below target --  
5 it's 8 per cent -- but that means the Number 4 was about  
6 30 per cent or maybe more.

7 **MR. JAGER:** Glenn Jager, for the record.

8 That's correct, Unit 4 had a very high  
9 forced loss rate. The reason for that was the liquid  
10 zone, zone 2 indication problem which required operations  
11 to shut the unit down for us to resolve it and during that  
12 period that it was shut down, because this is an  
13 unforeseen issue, it contributes to the overall forced  
14 loss rate unit.

15 It was shut down for a significant period  
16 of time last year while we worked to resolve that. Just  
17 by way of status in that particular issue, there was a  
18 very extensive trouble-shooting matrix executed to resolve  
19 that. It was in fact an engineer having a look at one of  
20 the sectioned spare zone compartments identified a concern  
21 or an issue in terms of inadequate clearance of a bubbler  
22 tube or a level indication tube which was recognized as  
23 the possible problem.

24 That work was executed on the unit -- it's  
25 a very delicate job. It was performed in situ and was



1 completed successfully. The unit has been returned to  
2 service last month. We completed a number of tests to all  
3 the tests and manoeuvres that in the past had created that  
4 problem on zone level indication.

5 The zone performed quite well. In fact the  
6 zone indication to date is extremely good on Unit 4 on  
7 zone 2, so we believe at this point that we've corrected  
8 that problem and we'll continue to monitor it but. But  
9 yeah, that unit was shut down for a significant period of  
10 time last year and into the early part of this year for us  
11 to resolve that issue.

12 **MR. TOLGYESI:** So now being repaired, it's  
13 good for about 2035?

14 **MR. JAGER:** Glenn Jager, for the record.

15 I fully expect that unit to perform well  
16 coming out of the vacuum building outage where we resolved  
17 the majority of our forced loss rate issues and yes, we'll  
18 drive it to excellence well beyond the required dates.

19 **MR. TOLGYESI:** On page 21 of your  
20 presentation you are talking about these TPARs --  
21 technical procedural action requests -- and you are  
22 talking about you are aiming about 450 per quarter, and  
23 when you are looking that these are just on a graph below  
24 in the blue is technical, regulatory and safety. And  
25 those are about 40 to 45 per quarter. That means there is

1 about 460 or 480 which are different, other kind I  
2 suppose. What's that?

3 **MR. JAGER:** Glenn Jager, for the record.

4 Yeah, the TPAR backlog and indicator  
5 relates to the number of procedure revision requests in  
6 operating documentation. It's something we track to  
7 monitor the health of those procedures.

8 And the differentiation between the overall  
9 number and the graph below, I'll ask Sean Granville to  
10 discuss those details.

11 **MR. GRANVILLE:** Sean Granville, for the  
12 record.

13 So the graph -- the top graph basically is  
14 our entire backlog of procedure change requests, if you  
15 will. So when someone identifies an issue with a  
16 procedure, they put one of these requests in and we  
17 monitor. The bottom graph though, they are the more  
18 significant ones that we need to fix with priority.

19 The difference is primarily enhancements.  
20 So if we have a procedure that is perfectly fine but, you  
21 know, staff at all levels when executing the procedures  
22 find a better way to do it, they'll put the procedure  
23 action request in and we'll evaluate it and we'll revise  
24 the procedure.

25 So it's part of our continuous improvement

1 process to always take our procedures and continue to  
2 improve them.

3 **MEMBER TOLGYESI:** And here you are talking  
4 just about the number. You are not talking about  
5 importance or what's the consequence or what's the  
6 timeframe of these backlogs.

7 **MR. GRANVILLE:** Sean Granville, for the  
8 record.

9 The more significant ones are the ones that  
10 are shown in the bottom chart. There is a continual  
11 throughput of procedure action requests as people  
12 identify, as we execute work in the station.

13 We have a process where if the procedure is  
14 wrong, if it cannot be executed as written, staff stop the  
15 work. They get their supervisor involved and there is a  
16 process by which we can do a revision, a one-time revision  
17 to allow the work to proceed, you know, with the  
18 appropriate review.

19 For all those times where that occurs, we  
20 put in this TPAR which will get the procedure, you know,  
21 fixed for good.

22 And the goal is when a procedure request or  
23 change request is input that is significant to safety or  
24 to -- you know, what's in the bottom graph, it will be  
25 changed before the next time that procedure is executed.



1 required and it needs to be executed and it's a technical  
2 procedure or regulatory safety, it's promptly revised and  
3 immediately available to the operators as soon as we are  
4 able to execute that revision, which can be right on the  
5 spot once we engage the necessary staff and we'll call  
6 them in if necessary to do that.

7 Where the work can be suspended, and as  
8 Sean mentioned, deferred to a later time until we have  
9 revised the procedure and corrected it, we'll do that and  
10 we'll properly revise it.

11 This backlog is in context of thousands of  
12 procedures. So we expect the number to be quite low, as  
13 it is here, but because they are identified, there's a  
14 continual identification of issues as operators encounter  
15 that. It will be reflected in this metric.

16 When the metric goes up, when it increases  
17 -- starts to increase, then that's something we monitor,  
18 take action on to apply additional resources, and also  
19 understand why that's taking place.

20 In some cases, it's a good thing. It's  
21 because operators are scrutinizing procedures in more  
22 detail and examining all possible issues that they might  
23 encounter.

24 **MEMBER TOLGYESI:** Now, when I'm looking at  
25 page 39, you are talking about all injury rates, which are

1 good. Your target is about 1.3 and your performance last  
2 year was 1.16.

3 However, when I'm looking since 2006, it's  
4 about 90 percent increase in this rate. It's going up  
5 from .61 to 1.16, which is although the numbers are small,  
6 it's close to doubling and it's a kind of trend and I hope  
7 that eventually you will curve it down.

8 **MR. JAGER:** Glenn Jager, for the record.

9 Yes, our safety objective is zero injuries.  
10 That's what our goal is. There are a couple of competing  
11 issues there. One is the level of work activity that is  
12 taking place on the units. When we're in an outage, there  
13 is greater exposure but that is not something that we  
14 accept because our goal is zero injuries.

15 What we have seen over the years is, as  
16 we've corrected safety behaviours and conditions within  
17 the plant, muscular skeletal disorder or body mechanics  
18 has been the primary contributor. That's what we're  
19 focusing on right now. And from time to time it's caused  
20 an increase in the all injury rate. But our goal, our  
21 overall goal is zero injuries.

22 **MEMBER TOLGYESI:** And my last question, Mr.  
23 President, it's on the following page number 40.

24 You are talking about accident severity  
25 rate. This is number of days lost due to accidents, what

1       you are saying, over 200,000 hours worked. It is number  
2       of accidents which have occurred in a year, in the current  
3       year, or -- and does it include modified work assignment  
4       or it's not?

5                   **MR. JAGER:** Glenn Jager, for the record.  
6                   That is the number of days lost, not the  
7       number of ---

8                   **MEMBER TOLGYESI:** Days lost. It's not  
9       modified assignment when an employee could do another job  
10      as compared to his standard position because of injury or  
11      something?

12                  **MR. JAGER:** Glenn Jager, for the record.  
13                  No, that is days not on modified release  
14      but days lost.

15                  **MEMBER TOLGYESI:** The year -- calendar year  
16      days lost?

17                  **MR. JAGER:** Glenn Jager, for the record.  
18                  That's correct. It's in that calendar year  
19      and it's a work -- it's days lost per 200,000 hours  
20      worked.

21                  **MEMBER TOLGYESI:** Because, you know, when  
22      you are looking over a period of time, say, three, four  
23      years, usually when you count that in the first year -- if  
24      you look over three years period, in the first year it's  
25      about 45 percent of time which is lost due to accident in

1 general, what I'm seeing in mining industry and other  
2 sectors.

3 And the other 50 percent it's about the  
4 second and third year, and maybe about five percent to 10  
5 percent in the following years it could happen, that when  
6 accident happen, say, 2008 and it could be -- how do you  
7 call that -- it could happen that he will have some  
8 consequence in the following year or so.

9 **MR. JAGER:** Glenn Jager, for the record.

10 I don't have that information, but if I  
11 understand you correctly, you're talking about a worker  
12 who would be, for example, injured in 2008, incurred days  
13 lost, but that injury carry over into 2009 from the same  
14 injury?

15 **MEMBER TOLGYESI:** Yes, same injury, but the  
16 time lost could be in the following years. Generally when  
17 you calculate it's about 45 percent. If you add all that  
18 it's 45 percent in the first year and about 50 percent in  
19 the second and third year, and it could happen that even  
20 in the fourth year you could have a consequence, a lost  
21 time.

22 So that's why I was asking if you calculate  
23 only the days lost in this year. So if somebody was  
24 injured last year and he cannot perform his work this year  
25 it's not counted.



1                   **MR. JAGER:** Glenn Jager, for the record.

2                   The days lost are counted regardless. What  
3 I can't tell you is what component of this number  
4 constitutes days that were carried from one year to the  
5 next, but if days are lost it is reflected in this metric  
6 regardless of whether it was incurred -- if the injury was  
7 incurred the year prior, if he's still -- that individual  
8 is still losing days in the subsequent year, it will  
9 accrue and be reflected in this number.

10                   **MEMBER TOLGYESI:** Okay.

11                   **THE CHAIRMAN:** Thank you.

12                   Dr. Barriault.

13                   **MEMBER BARRIAULT:** Merci, monsieur le  
14 président.

15                   Just a few questions really. Safety, as  
16 you pointed out to Dr. Barnes earlier, is one of your four  
17 pillars really in your organization, and yet when I look  
18 at your organization chart I'm not clear where safety fits  
19 into that. I don't see it anywhere in your Pickering A  
20 organization structure.

21                   **MR. JAGER:** Glenn Jager, for the record.

22                   The safety organization reports through the  
23 human resources line of business. The safety department  
24 and human resources are on site. They do not have a --  
25 they're not part of Pickering A directly but they are part

1 of the overall Pickering site organization and they  
2 participate at all the regular station forums. They are  
3 involved in our improvement plans. They participate --  
4 they're very much involved in station operation, although  
5 their actual reporting line is through -- it's a fleet  
6 program. It's part of the fleet overall.

7 **MEMBER BARRIAULT:** I guess that would  
8 explain then when I'm looking at your all-injury rate --  
9 which, incidentally, for 2009 should be higher than that  
10 because that's only for 10 months. So you must have the  
11 statistics for the rest of that year now. And what I'm  
12 wondering is if you didn't overshoot your objective.

13 **MR. JAGER:** Glenn Jager, for the record.  
14 We can get the final number for you but I  
15 believe it is very close to what you see there.

16 **MEMBER BARRIAULT:** So there has been no  
17 accident in November or December?

18 **MR. JAGER:** Well, the rate had not changed.

19 **MEMBER BARRIAULT:** It hasn't changed?

20 **MR. JAGER:** That's right.

21 **MEMBER BARRIAULT:** Okay.

22 **MR. JAGER:** But we'll get the exact number  
23 for you.

24 **MEMBER BARRIAULT:** And now my next step  
25 really, it begs the question, so what you do with your

1 walking wounded really in terms of work limitations and  
2 modified work and whatnot? It's one of the dangers of  
3 when you answered to the human resources department rather  
4 then directly line of management with safety and health.

5 **MR. JAGER:** Glenn Jager, for the record.

6 If I understand your question, you're  
7 asking how do we manage the employees who are injured.

8 **MEMBER BARRIAULT:** Yes, correct. You know,  
9 if you look at your statistics you're much higher in terms  
10 of work related injuries then what you were before. And  
11 having said that, your severity is zero and your severity  
12 is a measure actually of those who are off work.

13 Now, obviously you must have a modified  
14 work program in place with work restrictions that you put  
15 these people into to avoid a lost-time injury.

16 **MR. JAGER:** Absolutely. Glenn Jager, for  
17 the record.

18 We have a program where, if an employee is  
19 injured, first of all the line takes full accountability  
20 for the employee. He's assisted -- he or she is assisted  
21 by both wellness and safety in terms of return-to-work  
22 provisions, modified duties and accommodation of that  
23 employee so that they can return to the plant and be  
24 productive and continue to work.

25 That's an overall program that is put

1 together by both wellness and human resources and the  
2 safety department to assist supervisors in assisting  
3 employees who are injured.

4 **MEMBER BARRIAULT:** Thank you.

5 My next question deals with your -- I guess  
6 your fish barrier net that you've got set up. And I guess  
7 what I'm wondering on that is what is the size of the mesh  
8 that you use for your fish barrier?

9 **MR. JAGER:** Glenn Jager, for the record.  
10 I'll ask Mark Elliott to respond.

11 **MR. ELLIOTT:** It's one half-inch.

12 **MEMBER BARRIAULT:** A half-inch?

13 **MR. ELLIOTT:** Yes.

14 **MEMBER BARRIAULT:** How does it affect your  
15 water flow and your cooling ability of your plant?

16 **MR. ELLIOTT:** It doesn't affect the water  
17 flow. It's a large net that goes quite far out and across  
18 and so there's a large surface area.

19 **MEMBER BARRIAULT:** Okay. So you ---

20 **MR. ELLIOTT:** So it doesn't affect the  
21 water flow.

22 **MEMBER BARRIAULT:** You've increased the  
23 surface area to compensate for the restriction?

24 **MR. ELLIOTT:** Correct.

25 **MEMBER BARRIAULT:** Okay. That's basically

1           it.  Merci, monsieur.

2                         **THE CHAIRMAN:**  Can I piggyback on it?  So  
3           what I'm trying to understand from staff, so they've  
4           implemented the net, so what else needs to be done on  
5           this?  Because I thought there was still some work to be  
6           done in this particular area.  What is it else they were  
7           looking for?

8                         **MR. SCHAUBEL:**  Tom Schaubel.

9                                 I'd like Don Wismer to answer that question  
10          please.

11                         **MR. WISMER:**  Don Wismer, for the record.

12                                 There were two aspects to the fish  
13          mortality issue.  One was the intake fish loss and OPG's  
14          interim measure is the barrier net, and then they've --  
15          last month we got a report that did a cost-benefit  
16          analysis for the long term measures and we're reviewing  
17          that now.

18                                 The other aspect of fish mortality was the  
19          temperature affect of the thermal plume.  And they started  
20          a -- well, they developed a plan to study that to  
21          determine if there's an adverse effect that would require  
22          mitigation, and the field work started last fall and is  
23          carrying on now and we're expecting a report in July on  
24          that.

25                         **THE CHAIRMAN:**  But are we satisfied that

1 the fish mortality issue has been fixed or we haven't  
2 measured it yet?

3 **MR. WISMER:** Don Wismer, for the record.

4 It hasn't been measured yet. The net is a  
5 seasonal net. It's not in there for four and a half  
6 months of the year because of winter ice affects. So it  
7 was installed in mid-October and then removed in mid-  
8 November just to test the installation. So there hasn't  
9 been time to do formal testing. That will start when it  
10 gets reinstalled in April of this year.

11 **THE CHAIRMAN:** Thank you.

12 Dr. Barriault?

13 **MEMBER BARRIAULT:** That's all, Mr.  
14 Chairman. Thank you.

15 **THE CHAIRMAN:** So let's start the second  
16 round. Dr. McDill?

17 **MEMBER McDILL:** Two questions.

18 With respect to Attachment 2 in staff's  
19 document there's a reference to -- under "Licensed  
20 Activities" there's a reference to enriched uranium. Is  
21 that LEU or HEU? And I guess this is a Pickering A  
22 specific activity. It's page 1 of 19, "Licensed  
23 Activities", section 4, (iii).

24 **MR. JAMMAL:** Sorry, Dr. McDill, we're ---

25 **MEMBER McDILL:** We're trying to find it,

1       yes.

2                   **MR. JAMMAL:** Yes. Thank you. Can you just  
3       ---

4                   **MEMBER McDILL:** Page 1 of 19, "Proposed  
5       Pickering..." -- these are rationale for the licence  
6       conditions. So it's under 4, "Licensed Activities",  
7       (iii), "Possess, use, manage and store enriched uranium as  
8       required for fission chambers", CMD 10H6 Attachment 2,  
9       it's way at the back.

10                  **MR. SCHAUBEL:** For the record, Tom  
11       Schaubel.

12                   This is not a new licence condition. It  
13       was already in the previous licence ---

14                  **MEMBER McDILL:** Yeah, yeah. My question is  
15       it LEU or HEU? What kind of enriched uranium is it.  
16       Maybe Pickering knows.

17                  **MR. JAGER:** Glenn Jager, for the record.

18                   No, we don't know the degree of enrichment.  
19       However, we can likely find that out.

20                  **MR. JAMMAL:** Dr. McDill, to answer your  
21       question, we will give you precision; the best guesstimate  
22       from technical staff is "slightly enriched".

23                  **MEMBER McDILL:** Thank you and I'd like  
24       clarification -- I realize these are licence conditions  
25       but when they're side by side to Bruce, it makes it a

1 little easier to see sometimes.

2 In the same section there underneath, you  
3 have a statement to "possess, transfer, manage and store"  
4 cobalt-60 and then on page 18 under "Nuclear Facility" the  
5 wording is slightly different, it's "receipt, storage and  
6 handling" and I'm wondering why the wording is different  
7 in the two sections. I realize one is about a program and  
8 the other is an activity. So 16.1 is "receipt, storage  
9 and handling" and 4 sub (5) is "possess, transfer manage  
10 and store."

11 **THE CHAIRMAN:** Okay. You succeeded in  
12 confusing all of us. Now, tell us slowly, where are we?  
13 --- Laughter/Rires

14 **MEMBER McDILL:** All right. On page 18 of -  
15 --

16 **THE CHAIRMAN:** No wait, which document?

17 **MEMBER McDILL:** Same document. CMD 10-H6  
18 Attachment 2, the same one I was on. It follows page 168,  
19 if that helps.

20 **THE CHAIRMAN:** All right, it does.

21 **MEMBER McDILL:** Okay. So ---

22 **THE CHAIRMAN:** No, there's two, there's  
23 two.

24 **MEMBER McDILL:** These are rationale for  
25 changes to licence conditions. Sorry, folks. It's just a



1        wording question. Why is one "possess, transfer, manage  
2        and store" and the other part is a program that deals with  
3        "receipt, storage and handling"? I realize that cobalt-60  
4        is not a big-traffic item for you, so this is a small --  
5        it's mostly for staff that I'm asking.

6                    It's page 2 and page 18, Mr. President.

7                    **MR. SCHAUBEL:** I think I've got the answers  
8        for you. Tom Schaubel.

9                    In the first page, the wording used,  
10       "possess, use, manage and store" are those words that are  
11       in the Act. On the 18<sup>th</sup> page are those words that we  
12       would use as what we would expect as part of the program.  
13       That's really the only difference I can see is the first  
14       part we're using wording from the Act. The wording  
15       "possess, use and manage and store" are words right out of  
16       the Act. And the other part is what we would expect in a  
17       program.

18                   **MEMBER MCDILL:** I realize it's semantics,  
19       but one of them, there's actually a receipt and the other  
20       one they just possess.

21                   **MR. JAMMAL:** Ramzi Jammal, for the record.

22                   In the Act itself, there is no verb as  
23       "receipt." The possession in the Act under which includes  
24       the receipt of -- so as you were going through the  
25       requirement and the proper wording arising from the Act,

1 possession includes the receipt.

2 **MEMBER McDILL:** Thank you. That's it, Mr.  
3 President.

4 **THE CHAIRMAN:** Thank you.  
5 Dr. Barnes?

6 **MEMBER BARNES:** I just wanted to pursue a  
7 little bit more where my earlier questioning was and in  
8 the initial set of PowerPoints presented by OPG -- and I  
9 refer particularly to PowerPoint Number 4, which was the  
10 cornerstones PowerPoint, the four cornerstones of safety,  
11 human performance, reliability and value for money, the  
12 whole document has at its core a picture of excellence to  
13 be the best performing nuclear fleet in the world.

14 Could you tell us where you lie in the  
15 rankings of performing fleets in the world?

16 **MR. TREMBLAY:** Pierre Tremblay, for the  
17 record.

18 OPGN is constantly comparing and  
19 contrasting itself with major operators and in fact in  
20 2009 we conducted an extensive survey and benchmarking in  
21 the industry, oddly enough against the very cornerstones  
22 that we're talking about, and so what the comparisons  
23 indicated was that from a safety cornerstone perspective  
24 OPG was in the top quartile of the industry in all or  
25 certainly most of the areas.

1                   In the reliability cornerstone, Darlington,  
2 by virtue of the work that was done earlier and the focus  
3 on material condition and human performance are clearly  
4 performing very well, again in leagues with industry best.

5                   Pickering B's performance is coming forward  
6 and Pickering A reflects the challenges that we've  
7 discussed earlier, but certainly we're encouraged in terms  
8 of the performance of Unit 1 and, of course, Glenn talked  
9 about the liquid zone issue on 4, but again it's making  
10 strides and we have ever confidence, given the process and  
11 the fleet approach that we're taking, that we'll be  
12 successful.

13                   Certainly in terms of value for money, we  
14 would tell you that, you know, the smaller units in the  
15 earlier discussion we had are difficult to compete with  
16 the large operators, given the programs that are in place  
17 that are common to the industry, and so Darlington, not  
18 surprisingly, is doing much better in those comparators  
19 relative to others, whereas the smaller units tend to  
20 struggle in terms of the benchmarks that are out there.

21                   From a human performance standpoint I can  
22 tell you that the organization has seen a tenfold  
23 reduction in breakthrough events since the introduction of  
24 the human reliability program within OPG and we continue  
25 to strive for continued improvement in that area and our

1 performance measures and matrix and targets for the next  
2 five years indicate further improvements as well.

3 So that's a general review of the  
4 benchmarks. In fact, we have a fleet approach which  
5 requires all the program areas through peer teams to look,  
6 examine their performance and challenge themselves to  
7 improve performance and so that work is ongoing and we're  
8 essentially reaching for ever-improving levels of  
9 performance.

10 **MEMBER BARNES:** You appear before us not  
11 infrequently but as the licences have been extended now  
12 five years it's less frequently, and for an organization  
13 like OPG that's been around for a few decades basically,  
14 in different guises, it's a mature nuclear fleet, in a  
15 sense, which has had time to develop levels of excellence  
16 and so on through many, many reviews and including licence  
17 activities, of which we're just part of the fleet today,  
18 right, looking at Pickering A?

19 But I had some difficulty in this, really,  
20 trying to connect the rather voluminous amount of material  
21 you've given us with the claim of true excellence,  
22 probably because the criteria for true excellence aren't  
23 part of what we're looking at but we've covered it a  
24 little bit before.

25 And I was also surprised at when you take

1 off the top few PowerPoints or the first page or two, that  
2 the word "excellence" rarely occurs thereafter. So if you  
3 look at the different subsections of your report, in  
4 operating performance or human performance and so on, it's  
5 rarely there. It may be implied, but I mean I can just  
6 look at, say, the second part after the first few pages is  
7 called "Operating Performance" and says:

8 "The objectives of OPG organization of its nuclear  
9 generating stations are to achieve the following:  
10 maintain a sufficient number of nuclear generating  
11 stations qualified staff to safely operate, maintain and  
12 support the nuclear generating stations; maximize the  
13 efficiency and effectiveness of such workforce and hold  
14 employees at all levels accountable for performing their  
15 duties in accordance with the OPG standards and  
16 procedures."

17 And so, again, I don't see any sort of  
18 uplifting words there challenging the organization to  
19 really achieve the top quartile -- percentile, if you  
20 like, of nuclear fleets around the world as opposed to  
21 maintaining sort of good standards, and I guess this is  
22 what we're looking for as we went through then the many  
23 parts of the reports and the documentation that you were  
24 in fact achieving satisfactory performance but I had  
25 difficulty connecting that and saying, "Well, this

1 Pickering A is, you know, in the top quartile of --  
2 probably in the top quartile of nuclear generating  
3 stations around the world". And so I didn't notice.

4 And that also reflected then a message back  
5 to the troops, to the staff, on whether your internal  
6 charge to your employees really is that same message as  
7 opposed to the kind of messages that they'd expect you to  
8 present corporately in the first few PowerPoint's of a  
9 licence hearing like this.

10 Of course, you're striving for excellence  
11 but I didn't really see it in the rest of the document  
12 pretty much.

13 **MR. ROBBINS:** Yes. Wayne Robbins, for the  
14 record.

15 What you see on that slide is the standard  
16 that we use across the fleet and it's really based on  
17 Darlington's performance. Darlington is top quartile  
18 performance. You look at it in CANDU, it is there.

19 So what we've done is we've used that same  
20 template with those four focus areas to model Pickering A  
21 and B with the same programs and the same targets from all  
22 of our benchmarking to really raise the performance.

23 The journey to excellence is continuous.  
24 You're right, Dr. Barnes. You never hit it but you've  
25 always got to strive for it. So that's our journey. This

1 is our standard model across the fleet.

2 And as my colleague Mr. Tremblay said, you  
3 know, when you look at safety and metrics like that, we do  
4 very well compared to the industry, extremely well.

5 We struggle on some of our units with  
6 reliability which we are improving, but this is the fleet  
7 approach and it's based on industry experience.

8 **MEMBER BARNES:** Staff, do you have any  
9 comments?

10 I mean, I understand Darlington. We know  
11 that's one of the bright stars. It's newer and you'd  
12 expect that, but nevertheless, you're talking about the  
13 fleet overall of which is this a component.

14 **MR. SCHAUBEL:** For the record, Tom  
15 Schaubel.

16 We don't actually do a ranking of plants or  
17 we don't actually rate them with an overall plant number  
18 compared with other plants. OPG do have WANO come in  
19 periodically and give ratings, which they don't share that  
20 actual rating with us.

21 Pickering A has probably had more below  
22 expectations ratings than other CANDU plants that we  
23 monitor, but they have been noticeably improving over the  
24 past three years. Unit 4 started up in 2003. Unit 1  
25 started up in 2005. They had very many struggles for the

1 first several years of those units starting up, which they  
2 seem to be ironing out now, but they have been struggling  
3 up until there's noticeable improvements the last two  
4 years.

5 Thank you.

6 **MEMBER BARNES:** Okay. So let me just come  
7 back to that issue I raised upfront, apart from the more  
8 specific questions on the below expectations list.

9 When you asked -- and this refers back to  
10 staff CMD page 137. It was in 4.6, "Information on  
11 significant future activities at Pickering NGSA A beyond  
12 2015."

13 So CNSC staff under 4.6B requested that as  
14 part of the licence renewal package that we're looking at  
15 today, OPG submitted information on significant activities  
16 envisaged for this plant beyond the next licence period.  
17 Okay, beyond 2014.

18 And the last sentence says:

19 "No major activities are identified other than the most  
20 likely predictive date for reaching end of life is the  
21 mid-2020s before shutdown is required."

22 Okay. So again, this is one of the  
23 concerns I had and why I asked those initial questions is  
24 that there did not appear to be information coming from  
25 the licensee on the last two or three licence periods of a



1 plant that is destined to shut down then soon after.

2 So we are now facing a licence term of five  
3 years and what staff has argued for in the past is that  
4 rather than have mid-term reviews is that we have more  
5 periodic reviews as part of the annual reviews of all  
6 nuclear plants.

7 So I'm going to ask the staff if you would  
8 comment then, given the early discussion on this issue,  
9 about the refurbishment of plants that's going on, right,  
10 and is projected to go on, the real end of life that we've  
11 been alluding to today in Pickering A and Pickering B.

12 These, to me, are sort of major activities  
13 that are going to face both the licensees and the  
14 Commission in the not-to-distant future; in other words,  
15 that need a lot of planning. You can't just sort of walk  
16 up to it and then say we'll consider it then, and to which  
17 the public will be really concerned.

18 So I personally doubt -- I'll put my cards  
19 on the table rather than just asking you. I personally  
20 doubt that the process that we have for renewing all  
21 nuclear plants on that annual basis where we more or less  
22 go plant after plant after plant is an appropriate vehicle  
23 to address publicly some of these bigger issues, all  
24 right, on an annual basis because we get down into the  
25 weeds again.

1                   Right. You know, what's happened in the  
2 last year or what may happen before we visit you again,  
3 and yet, we have these major activities of closing  
4 Pickering B, Pickering A, all that that implies, where do  
5 we put all those materials which get down into the waste  
6 disposal. You know, what's happening into himself the  
7 power generation in the province, et cetera, human  
8 resource, where do these employees go comes in possibly at  
9 the new build.

10                   So do you think -- this is to staff -- that  
11 the vehicle that we have now chosen to replace the mid-  
12 point reviews of something like Pickering A really is an  
13 appropriate vehicle to consider some of the bigger issues  
14 that I tried to raise earlier?

15                   **MR. JAMMAL:** For the record, Ramzi Jammal.

16                   You're making a very good point, Dr.  
17 Barnes, with respect to the continuous improvement that we  
18 are carrying out in the CNSC and as you mentioned, we are  
19 looking -- time is not on our side with respect to --  
20 well, refurbishment, we established a very robust program  
21 which has integrated safety review that is looking at a  
22 period -- an extended length of period by which we  
23 establish regulatory requirements for the refurbishments.

24                   With respect to the end of life management,  
25 you're touching on a very pointed issue of concerns to

1 staff and to the Commission, and that's why we're putting  
2 in place the processes to be able to identify the end of  
3 life management that will hit on major components,  
4 condition assessments, waste management and so on and so  
5 forth.

6 And I will ask my colleagues who are in the  
7 technical trenches to add to this, but from my commitment  
8 and staff's commitment to the Commission is we are  
9 establishing these processes in place so we are looking  
10 for a long-term period with respect to the management and  
11 safety measurement of these plants.

12 **THE CHAIRMAN:** Can I jump on something?  
13 That's not my understanding about what the annual report  
14 intends to be. The annual report is to report on any  
15 significant changes to the existing licence conditions.

16 If during the end of life process comes in  
17 and there's going to be major events that require updating  
18 the handbook, the Licence Conditions Handbook, they'll  
19 have to come in front of us and that may come through a  
20 public hearing depending on whether it's a major component  
21 that needs replacement, whether a shutdown is required.  
22 So somebody correct me if my understanding is different  
23 than what I just said, if it's not your intention to do it  
24 that way.

25 **MR. JAMMAL:** For the record, Ramzi Jammal.

1                   The intention is to do it on a yearly basis  
2                   and above and beyond the yearly basis. The IRS mission  
3                   that has identified our sound regulatory practice and the  
4                   need for what we're going to say the periodic safety  
5                   review looking at the long-term aspect with respect to  
6                   regulatory requirements of a facility, let it be brand new  
7                   facility or existing facility or undergoing refurbishment.

8                   And we are setting in place actually coming  
9                   before the Commission with respect to a policy CMD and  
10                  establishing the periodic safety review of a 10-year  
11                  cycle, which clearly identifies upfront what is going to  
12                  be done with respect to the current operating facility or  
13                  even will be applying for brand new facilities.

14                  **MEMBER BARNES:** And a final question really  
15                  to OPG along these lines, in your quite extensive  
16                  documentation of public information, and there were very  
17                  many, many examples of very specific aspects and staff  
18                  commented that you had succeeded, I think, in providing  
19                  certainly a level of comfort to the local environment out  
20                  there and so on.

21                  But again, could you in a broader context  
22                  of Pickering A and Pickering B and the overall phase-out  
23                  of these plants within a decade or 15 years, what plans do  
24                  you have in terms of public information beyond this  
25                  particular licence running on as you've asked -- as you're

1 asked to provide things for the next five years beyond  
2 this licence? What do you plan for public information  
3 strategy to deal with some of these bigger issues as  
4 opposed to the specific nuts and bolts of the next five  
5 years?

6 **MR. TREMBLAY:** Pierre Tremblay for the  
7 record.

8 Clearly, the news, the announcement that  
9 took place yesterday, there is obviously a plan which is  
10 being enacted to communicate with our stakeholders and  
11 with the community that includes the community advisory  
12 council, the town council and so forth.

13 I think it's important to underline and  
14 note that with regards to Pickering A re-licensing and  
15 over the next five years, the focus and the attention and  
16 the direction of the organization would be continued  
17 improvement of the plant and maintaining a sharp focus on  
18 continuing to improve the operation. Clearly, it's in our  
19 interest and we will provide what information is  
20 necessary, whatever processes are put in place in terms of  
21 the longer term planning.

22 As far as the discussion on what will  
23 happen in 10 years time, we will produce and discuss a  
24 continued life plan for the facility and part of our  
25 overall scheme is to keep our stakeholders in the

1 community well informed. Those plans are being played out  
2 in the short term in terms of communicating the decision  
3 that's been made and the implications and, by the way,  
4 that includes our own employees, members of the executive  
5 committee sitting down with our employees to talk about  
6 the decision, the long term impact over the next 10 years.

7 Quite frankly, in the short term, the focus  
8 continues to be on operating and maintaining the plant  
9 safely. Very little will occur from an operational  
10 standpoint but to focus on that and to do what we need to  
11 do to maintain a highly reliable product.

12 So those communications are taking place,  
13 that is obviously happening in the short term and we're  
14 building, if you will, our long term plan and we'll  
15 communicate that with you and others as things move  
16 forward.

17 **THE CHAIRMAN:** If I may jump on that one  
18 too. You know that since 9/11, we sort of stopped doing  
19 public visits, et cetera. It seems to me that two plants  
20 that are shut down -- I don't think the general public  
21 knows what a decommissioned plant looks like and it's a  
22 pretty safe -- does anybody consider about the restarting  
23 some plant to -- take a look to take the mystery away so  
24 they don't see this fence with people with highly, you  
25 know, armed people and so if they take away some of their

1       mystery of the site. Have you been thinking about  
2       resurrecting some of those public outreach/in-reach?

3                   **MR. TREMBLAY:** President Binder, for the  
4       record, I know that there have been some active  
5       discussions around what can be done. I think that in  
6       fairness, we do what we can within the current balance  
7       that we have to communicate outwards to the public and  
8       have a very active program.

9                   Having said that, I think it's a fact that  
10      there has been much less presence of the general public on  
11      site since 9/11 and we'll certainly take that back. I  
12      know it's under discussion but we'll take it back based on  
13      your comments this afternoon.

14                   Thank you.

15                   **THE CHAIRMAN:** Thank you.

16                   **MEMBER GRAHAM:** I just have two questions.  
17      One refers to the fact that we are -- and this is to CNSC  
18      staff. We are charting some new territory with regard to  
19      the Licence Condition Handbook. We've got 153-page  
20      document before us and so on.

21                   As far as process goes, and you know, I  
22      mean we've talked a lot this afternoon with regard to  
23      minimum shift complement or human performance and so on.  
24      If the licensee is not meeting certain conditions, what's  
25      the process of acting? And before you, you know, are

1       there letters of warning, are there visits, are there  
2       this, this, this? Could you just more or less outline how  
3       long before the Commission itself becomes aware of shoddy  
4       work or shoddy acknowledgement of certain aspects of the  
5       handbook or of the licence?

6                   **MR. JAMMAL:** Ramzi Jammal for the record.

7                   Mr. Graham, it's a very valid question and  
8       the powers of the Commission and the reporting to the  
9       Commission has not changed, so we will continue with  
10      respect to all our regulatory compliance program; that if  
11      at any time the licensee is non-compliant with the licence  
12      condition, according to the risk integrated approach we've  
13      got, we will try to take corrective actions at the staff  
14      level, if that has not been done within the required  
15      period of usually on average 30 days, but depending on the  
16      risk and depending on the length of the corrections to be  
17      implemented.

18                  At the same time, we have several  
19      requirements that if the licensee is against licensing  
20      conditions where it requires reporting under S-99, again  
21      depending on the severity and the response of the  
22      licensee, we will be bringing it up towards the  
23      Commission.

24                  In our annual report we provide the  
25      Commission with an overview of the compliance activities



1 and the compliance of the licensee.

2 With respect to the Licence Compliance  
3 Handbook, it provides much more clarity and actually  
4 frames the regulatory expectations from our expectations  
5 from the licensee and our staff to verify against.

6 And as we stated before and we commit again  
7 to the Commission as we go into the Licence Compliance  
8 Handbook process, that we'd be providing you yearly update  
9 with respect to not just the changes but it will encompass  
10 the compliance activity.

11 **MEMBER GRAHAM:** Do you though -- you don't  
12 develop an S-99 if the ranking is below expectation do  
13 you, or do you not? Or if it remains below expectation  
14 for a period of time then do you -- I guess when is the  
15 report of the Commission? Has it got to be one step lower  
16 than below expectation, or below expectation it's  
17 reportable, or below expectation for a period of a year  
18 it's reportable? How is the Commission participating in  
19 such an important activity?

20 **MR. JAMMAL:** For the record, Ramzi Jammal.

21 I did not mean to confuse you between S-99  
22 and safety significant issues.

23 **MEMBER GRAHAM:** Yes.

24 **MR. JAMMAL:** We have the early notification  
25 report to address immediate issues with respect to

1 bringing it forth in the public domain.

2 Second, again, based on the risk of the  
3 findings, if it's an immediate health and safety issue we  
4 have the tools by which we will issue the order to stop  
5 work and then accordingly we will take actions.

6 So with respect to the severity of the  
7 findings, again, if it's significant, S-99 is one of the  
8 reporting tools in addition to our compliance activity.

9 So there is self-replying by the licensee  
10 and there is compliance activity inspection that we carry  
11 out. Collectively, we will be providing yearly updates  
12 with respect to that information.

13 If I didn't answer your question, please  
14 tell me.

15 **MEMBER GRAHAM:** No, I guess all I want to  
16 know -- the level of satisfaction that the Commission has  
17 in realizing that if the licensee, whether it's OPG or  
18 someone else, is in violation or is not meeting the  
19 expectations of the licence or the handbook, how does the  
20 Commission involve itself in getting that corrected?

21 I mean, if a certain aspect of the licence  
22 is below expectation or not meeting the expectation and it  
23 goes on for four years -- we get it at mid-term -- not  
24 mid-term reports but we get the annual reports, we would  
25 get it there but that's the safeguard there is -- it would

1           come before us every year, is that what you're saying, and  
2           if it was severe enough it would be an S-99?

3                       **MR. JAMMAL:** For the record, Ramzi Jammal.

4                       The answer is at minimum once a year. If  
5           it's severe findings, we'll come before you to report it  
6           directly. And this S-99, again, based on the reports  
7           coming from the S-99, it's very nature we'll be reporting  
8           to the Commission.

9                       I will ask Mr. Ken Lafrenière to add as the  
10          director in the regulatory program division.

11                      **MR. LAFRENIÈRE:** Thank you.

12                      Yeah, just to build on the answer that  
13          Ramzi said, I think the base of your question is how does  
14          the events figure into the overall rating of a plant?

15                      We have a graduated enforcement process  
16          that we deal with to arrive at a rating. The event that  
17          there is -- we take events into account. So, for  
18          instance, the ISTB event, which was a fairly severe event,  
19          came in front of the Commission several times under the  
20          early notification report process and that factored into  
21          the grades and into the improvement projects that we've  
22          discussed previously at this hearing.

23                      In terms of the graduated enforcement  
24          process, we follow a strict process that first the  
25          notifications, letters, and then if needed we bring up to

1 the Commission for licensing action, as required. And so  
2 far, that's a very, very rare occurrence. We have typical  
3 -- a very good compliance in the power reactor field.

4 **MEMBER GRAHAM:** Thank you.

5 Just one other question I have, and that's  
6 with regard to the fish -- the impact of fish mortality  
7 and so on. And you said you put a net up in October and  
8 took it down in November. My understanding was that the  
9 mouth or at the entrance of those power plants, there  
10 isn't much ice accumulation because of the discharge of  
11 the warm water going out. Fish do swim in the wintertime  
12 and so on. Is there not some way or some device of  
13 addressing this on an annual basis rather than just in the  
14 months when there's no ice and so on?

15 Could you explain -- could you be a little  
16 more explicit? And I think that goes to OPG should answer  
17 that question.

18 **MR. JAGER:** Glenn Jager for the record.

19 The barrier net is around the intake of the  
20 power plant and, therefore, the warm water is ---

21 **MEMBER GRAHAM:** Yeah, discharged. I  
22 realize that.

23 **MR. JAGER:** --- goes through a separate  
24 path.

25 There can be ice on the lake and,

1           therefore, it can be subjected to damage or effects from  
2           ice on the lake.

3                       As to alternate methods and evaluation of  
4           the effectiveness and the timing of the installation and  
5           removal of the net, I'd just ask Frank Bajurny to comment  
6           further on that.

7                       **MR. BAJURNY:** Thank you. Frank Bajurny for  
8           the record.

9                       As Glenn indicated, there is a potential  
10          for ice impacts in the winter, which could damage the net.  
11          The other part of it is the divers who have to maintain  
12          that net are very subject to lake conditions of  
13          temperature, wave action, et cetera, and they are  
14          generally not available to make those kinds of repairs.  
15          So the net would be much more susceptible to damage and  
16          lasting damage during the winter, which is the reason it  
17          comes out.

18                      In terms of impingement by fish, only  
19          between five to 15 percent of the fish are impinged during  
20          the winter months. It is a time period of lower  
21          impingement activity.

22                      And as Glenn also indicated, we have  
23          undertaken a number of -- well, right now, we are studying  
24          -- right now, we are measuring impingement at the station  
25          as part of determining the overall effectiveness of the

1 net. And based on whether we've met the targets set down  
2 for us by the DFO and the CNSC, we've already done cost  
3 benefit analysis of other measures that might be  
4 undertaken if we're not achieving what we want with the  
5 barrier net.

6 **MEMBER GRAHAM:** Okay. Thank you for the  
7 answer. I don't -- not that I don't accept, but I think  
8 through technology today that there must be a way.

9 You have a major problem with fish  
10 mortality. You have a major problem with the warm water  
11 plume affecting larvae. And, you know, coming from  
12 Atlantic Canada where they put a bridge to Prince Edward  
13 Island and the divers worked all winter in a lot deeper  
14 water and a lot more ice when the ice is running through  
15 there and so on, I don't realize that you can't find  
16 divers in Ontario in the winter to inspect the nets.

17 But regardless, there is a problem and I  
18 think it should be not necessarily a licence condition as  
19 such, but it must be something that has to be resolved  
20 because it's been identified, it's a black mark against  
21 OPG for not dealing with it, and certainly, I think it has  
22 to be addressed. And I would hope that maybe on Day 2, we  
23 could have maybe a better resolve than the answers we got  
24 today.

25 **THE CHAIRMAN:** Anybody care to comment on

1           it or not?

2                         **MR. JAGER:** Glenn Jager for the record.

3                         Yes, we'll bring back additional  
4           information on Day 2. We are working closely with the  
5           CNSC to resolve this issue and meet the expectations in  
6           terms of reducing fish mortality and the effects of the  
7           thermal plume. These studies are a key part of that.  
8           We're committed to resolving that, and we will work  
9           closely with CNSC staff to do so.

10                        **THE CHAIRMAN:** Thank you.

11                        Monsieur Harvey?

12                        **MEMBER HARVEY:** Just to continue on that  
13           point. On page 106 of the staff CMD, the first paragraph,  
14           the top paragraph, that point is addressed about the  
15           experience with the net. You were supposed to receive a  
16           monitoring program late 2009, so it should have been  
17           produced. And then there is the longer term options that  
18           you just talked about.

19                        And at the end of the paragraph, we see "a  
20           final report is expected in December and implementation of  
21           acceptable long term options by 2012."

22                        Are we always on that schedule and does the  
23           second program -- the second study depend of the result of  
24           the first experience with the net? I'll ask the staff to  
25           comment on that.

1                   **MR. WISMER:** For the record, Don Wismer.

2                   There was a schedule established in the  
3 original 12-2 request in October 2008, and it's been  
4 followed to date. What is expected to happen this year is  
5 detailed engineering plans for implementing impingement  
6 and entrainment mitigation by 2012. So a lot of that  
7 hinges on how successful this barrier net is.

8                   And the issue of winter fish loss is part  
9 of that. It can be as high as 20 percent of the annual  
10 loss, and if that's the case then there may be difficulty  
11 meeting the 80 percent target. And in other sites where  
12 they've used this technology there can be problems with  
13 clogging from algae.

14                   So the performance effectiveness that's  
15 going to start in April is quite important. And the other  
16 thing that's quite important is the staff review of all  
17 the other mitigation options and the cost benefit  
18 associated with that, which just started a month ago  
19 because that's when we got the report.

20                   So some of these questions are already  
21 coming up among staff, but we haven't completed our  
22 review. When we have we'll share them with OPG and  
23 discuss the schedule and the path forward and see if it's  
24 still consistent with what the original expectation was.

25                   **MEMBER HARVEY:** It's difficult to conceive



1 that the engineering of that could be started before to be  
2 decided on the option to take. So I don't really  
3 understand the timeline of that and the engagement of  
4 parties. Could we have something presented in Day 2 that  
5 would be more expressive?

6 **THE CHAIRMAN:** Can I reinforce this? Not  
7 only that. First of all, is that the same problem with  
8 Pickering B? Just remind me.

9 So now that we know what the long-term plan  
10 of Pickering B is and maybe beginning to get a whiff of  
11 what's going to happen in Pickering A, how many years more  
12 engineering studies are you going to do before the end  
13 comes here that will say well, good, we have a nice  
14 engineering study but no solution?

15 So I guess presumably we need to move one  
16 way or another a little bit more quickly. Did I get this  
17 right? I mean, I don't think the time of 2012 is really  
18 an acceptable time horizon here for a solution.

19 Anybody want to comment?

20 **MR. JAGER:** Glenn Jager for the record.

21 To answer your first question, yes, it's a  
22 common intake for both Pickering A and Pickering B.

23 On the second issue, in Day 2 we will bring  
24 back a more fulsome response, as has been requested by  
25 Commissioner Graham, and examine the overall timelines

1 along with CNSC staff in that response.

2 **THE CHAIRMAN:** Thank you.

3 Monsieur Harvey?

4 **MEMBER HARVEY:** On page 16 of the staff  
5 document at the bottom of the page, the PWWF consists of  
6 several facilities at three different locations. The PWWF  
7 processes and stores used nuclear fuel from the Pickering  
8 A and B that is undamaged. What does that mean and what  
9 has happened with the damaged fuel?

10 **MR. SCHAUBEL:** Could you please repeat the  
11 question? I ---

12 **MEMBER HARVEY:** At the bottom, we can read  
13 that the PWWF -- it's the last paragraph of page 16. So  
14 the question is, while you take care -- the PWWF takes  
15 care of the undamaged fuel. What does that mean? There  
16 is damaged fuel and what do you do if there is -- could  
17 you answer that, please?

18 **MR. JAGER:** Glenn Jager, for the record.

19 If I understand your question correctly,  
20 the fuel that -- any fuel that is damaged or has  
21 indication of damage remains in the bay, to my knowledge,  
22 and is not loaded into the tri-fuel storage modules.

23 **MEMBER HARVEY:** I'm sorry, but I've got  
24 difficulties to hear you.

25 **MR. JAGER:** Glenn Jager, for the record.

1                   The fuel that is -- any fuel that is  
2                   damaged or we observe to have a defect remains in the bay  
3                   and is not loaded into the dry fuel storage modules. So  
4                   it remains there and ---

5                   **MEMBER HARVEY:** Is it there for a period of  
6                   time or it will always stay in the bay?

7                   **MR. JAGER:** Glenn Jager for the record.

8                   That's correct. It will stay in the bay  
9                   until we determine a path for it in terms of dealing with  
10                  the defect fuel. And by remaining in the bay, we have --  
11                  the bay has all the purification systems necessary to  
12                  maintain the purity of the bay and accommodate a defect  
13                  fuel when its brought there.

14                  **MEMBER HARVEY:** Thank you.

15                  **THE CHAIRMAN:** Thank you.

16                  Monsieur Tolgyesi.

17                  **MEMBER TOLGYESI:** I have one question.

18                  If I was understanding well, Mr. Tremblay,  
19                  what you said, that the next 10 years will lead to a new  
20                  technology. Could you elaborate on this subject? You  
21                  mean a new nuclear technology or some further technology?

22                  And if you consider that it takes 10 years  
23                  to develop something like this and you have 10 years to  
24                  close Pickering, what do you have in mind by "new  
25                  technology"?

1                   **MR. TREMBLAY:** Pierre Tremblay, for the  
2 record.

3                   My reference to new technology was around  
4 new build, and the other aspect of the announcement  
5 yesterday which was that OPG will continue to pursue the  
6 regulatory processes associated with new build.

7                   Clearly there's some issues moving forward.  
8 We're essentially committing ourselves to moving the  
9 processes as far forward as possible so that when the  
10 decision is made with the technology that we're  
11 essentially ready to move forward.

12                   Clearly, there are a number of things that  
13 need to fall into place, but that's really what I was  
14 referring to in my comments.

15                   **THE CHAIRMAN:** Thank you.

16                   Dr. Barriault.

17                   **MEMBER BARRIAULT:** Thank you, Mr. Chairman.

18                   I'm having a few problems really and the  
19 first problem I have is I asked a question a while ago,  
20 does the net restrict your water intake and the answer was  
21 no. Well, I can understand why because the net's not  
22 there. That would have been the short answer.

23                   Secondly, really, I asked the question,  
24 where does health and safety, occupational health and  
25 safety, fall under and I was told human resources, but I

1 look at the organization chart and there's no human  
2 resources in your organization chart.

3 Now, obviously there must be another chart  
4 somewhere else where human resources falls into. Maybe  
5 you can explain that?

6 **MR. JAGER:** Glenn Jager, for the record.

7 That's correct. Human resources is part of  
8 the fleet department or group and therefore falls outside  
9 of the station organization.

10 But I'd just like to reiterate that they  
11 are very much a part of the station; they are on site.  
12 They work very closely with our managers and when it comes  
13 to the overall management of injured employees or  
14 employees that are in our wellness program or return-to-  
15 work provisions, full accountability for that rests with  
16 the line manager, the line supervisor, who are part of the  
17 station organization. They have 100 percent ownership of  
18 the wellness and health and well being of those employees  
19 and any return to work provisions.

20 The human resources and wellness groups,  
21 although they are outside the station management line,  
22 assist the line management in providing for those  
23 provisions and assisting the employees who return to work  
24 and maintaining a productive career.

25 **MEMBER BARRIAULT:** Is the union part of the

1       players in that group also, as to determine who works  
2       where in terms of worker limitations and restricted work?

3               **MR. JAGER:** All the employees are  
4       represented by the union or unions and, yes, they are  
5       involved. We work very closely with the union  
6       representation to, again, work with the employee and  
7       provide for return-to work provisions or modified duties  
8       or whatever is necessary.

9               **MEMBER BARRIAULT:** My next question deals  
10      with your presentation on page 71 and it's regarding re-  
11      certification examinations for your shift supervisors,  
12      managers, nuclear operators, and you've got a seven  
13      percent failure rate on that examination.

14              Does that mean that you've got seven  
15      percent of your force that's operating the plant that does  
16      not have the knowledge to pass the examination?

17              **MR. JAGER:** Glenn Jager, for the record.  
18      That seven percent failure of the re-certification was  
19      your question?

20              **MEMBER BARRIAULT:** I'm sorry.

21              The question is, on page 71 of your  
22      presentation, the re-certification examination success  
23      rate for 2009 -- these are people who are working at the  
24      plant and re-certify, and I understand that there's seven  
25      percent failure.

1                   Does that mean that you -- and this is  
2                   probably a minimum competency exam; I don't imagine that  
3                   it's a maximum competency -- does that mean that you've  
4                   got seven percent of your operators that lack the  
5                   knowledge to operate the plant?

6                   **MR. TREMBLAY:** Pierre Tremblay, for the  
7                   record.

8                   What you see there on page 71, the upper  
9                   section deals with the initial program and that's really  
10                  the success rate in getting through. So if they don't get  
11                  through they either get back into the program.

12                  What we're talking about in terms of re-  
13                  certification are areas where there are issues with the  
14                  re-certification. Those individuals are taken out of the  
15                  role, if you will, remediated, retested before they're  
16                  allowed to return to their duties.

17                  **MEMBER BARRIAULT:** Oh, I understand that,  
18                  but before they are tested they're still operating the  
19                  plant. It's only after they fail the test that you remove  
20                  them?

21                  **MR. TREMBLAY:** There is continuous  
22                  training, continuous testing. What we're talking about  
23                  here is a formal re-testing that occurs on a certain  
24                  period as specified by the RD-204 process, and those  
25                  occasions where there's an issue that's identified that

1 needs to be remediated and this is really what we're  
2 talking about here; that's correct.

3 **MEMBER BARRIAULT:** So they're identified as  
4 being a problem before they write the exams is what I  
5 understand then? It's not an automatic re-certification  
6 for everybody and you've got a seven percent failure?

7 **MR. TREMBLAY:** What we're talking about  
8 here -- Pierre Tremblay, for the record -- is, in fact, a  
9 performance-based test through a simulator where they're  
10 required to perform up to our standards. Where there are  
11 issues that are identified, the individuals are taken  
12 aside, remediated before they're put back into the control  
13 room.

14 **MEMBER BARRIAULT:** No, I understand, but  
15 before they do the exam, they're obviously working at that  
16 post?

17 **MR. TREMBLAY:** That is correct.

18 **MEMBER BARRIAULT:** Okay, thank you.

19 The CNSC staff, are you comfortable with  
20 this?

21 **MR. JAMMAL:** Ramzi Jammal, for the record.

22 I will ask Justin to respond to this;  
23 certification evaluation program division.

24 **MR. SIGETICH:** Justin Sigetich, for the  
25 record, from the personnel certification division.



1           The staff are required to -- certified  
2           staff are required to continuously take the -- there's a  
3           continuing training program, as was mentioned by the  
4           Ontario Power Generation representatives, and in addition  
5           to that continuing training that the operators are  
6           required to undergo, they also complete these re-  
7           qualification tests on a defined period to ensure that  
8           they do continue to have the knowledge and skills to be  
9           able to perform their duties

10           And with the requirements for these re-  
11           qualification tests is able to identify and remove the  
12           people from the duties if they are deemed to have any sort  
13           of deficiencies and, as was mentioned, they are taken off  
14           shift and retrained and retested prior to being put back  
15           on shift.

16           So the CNSC doesn't have any concerns with  
17           the methods that these candidates are identified, the re-  
18           qualification training or the testing that's implemented.

19           **MEMBER BARRIAULT:** So basically, there is  
20           that possibility that the employee is not, I guess,  
21           mentally fit to do the job for which he is working.

22           **MR. LAFRENIÈRE:** Ken Lafrenière, for the  
23           record.

24           I'd like to put that number in context.  
25           That 7 percent doesn't represent a moment, instantaneous

1 moment. There's a team approach to certified staff.  
2 They're part of a crew. Several certified staff serve on  
3 the same crews at the same time. So it's not 7 percent of  
4 the crew. It's 7 percent over all the re-certification  
5 testing.

6 Again, a very conservative number and, as  
7 Mr. Sigetich just pointed out, it's part of our regulatory  
8 requirements for continuous training. These are simulator  
9 exams that test the bounds of their knowledge for events  
10 that are extremely rare.

11 So the message is team approach at all  
12 times as qualified staff in the facility. These are  
13 numbers to determine who needs specific training. They  
14 are fed back into the training process. Systematic  
15 approach to training requires that these examinations that  
16 uncover weaknesses, that goes back into the certification  
17 process so that those trainings are reinforced or any  
18 lessons learned.

19 **MEMBER BARRIAULT:** Okay. So actually these  
20 people would not be working alone, if I understand  
21 correctly then. Is that correct?

22 **MR. LAFRENIÈRE:** That is correct. There  
23 are multiple barriers in place.

24 **MEMBER BARRIAULT:** Okay. Thank you. I'm  
25 sorry.

1                   **THE CHAIRMAN:** Okay. Anybody else has --  
2                   Mr. Graham?

3                   **MEMBER GRAHAM:** I just have one question to  
4                   CNSC.

5                                 Several meetings ago, several months ago,  
6                   we had before us some additions to the decommissioning  
7                   fund for OPG by the Government of Ontario where it was  
8                   required to come forward.

9                                 Can you report if that extra funding is in  
10                  place yet or will it be in place for day two?

11                  **MR. JAMMAL:** For the record, Ramzi Jammal.  
12                  Thank you, Mr. Graham.

13                                 Don Howard, would you like to take it?

14                  **MR. HOWARD:** Don Howard, Director, Waste  
15                  and Decommissioning.

16                                 Yes, a few months ago we were before the  
17                  Commission with the revised OPG financial guarantee.  
18                  Following that Commission hearing, the Ontario Minister of  
19                  Finance has signed a new agreement with the province.  
20                  That has been submitted in the last couple of days to the  
21                  CNSC for the President of the CNSC to sign off on behalf  
22                  of this organization.

23                                 So it will be in place by day two, yes.

24                  **MEMBER GRAHAM:** In other words, it will be  
25                  in place for the new licensing and that's all I want to

1 know. Thank you.

2 **THE CHAIRMAN:** Any other question?

3 I have just one general kind of question.  
4 You have quite a few kinds of -- the health of the working  
5 environment in terms of accidents, et cetera, and you  
6 continuously benchmark it, I assume, against the industry  
7 benchmark.

8 I'm just curious to know is there any way  
9 to benchmark it against other industries? Because we  
10 always compare nuclear to nuclear, I'd like to compare  
11 nuclear to another workplace, maybe mining, maybe airline,  
12 maybe banking.

13 I don't know, just to give a sense of what  
14 does it mean because nobody, at least in the public --  
15 they don't relate to the nuclear benchmark. It's not  
16 something that anybody would understand.

17 **MR. TREMBLAY:** Pierre Tremblay, for the  
18 record.

19 I recall this discussion perhaps in the  
20 past. One of the examples of, if you will, non-nuclear  
21 comparisons that we did do is with regards to employee  
22 safety. In fact, we compare ourselves, given the nature  
23 of the work that we do and the province that we're in,  
24 with the CEA, the Canadian Electrical Association.

25 So when we talk about benchmarks, we look

1 for the best comparators, if you will. In terms of plant  
2 reliability and value for money and others, we're kind of  
3 hampered there in terms of comparing our performance like  
4 for like.

5 We certainly look for differences in terms  
6 of reactor design and complexity and so on to try to  
7 explain some of the differences, but I think in terms of  
8 good practices, we do benchmark outside of the nuclear  
9 industry in terms of dealing with employees, cultural  
10 issues and so on.

11 **THE CHAIRMAN:** Those are the kinds of  
12 things I think you should display and, depending on your  
13 numbers -- I mean sick leaves are sick leaves, no matter  
14 where you are. If you like, injury or workforce kind of  
15 turnover, firing -- I mean I'm talking about the human  
16 elements in there that one should be able to compare with  
17 other labour force kind of an indicator that one can do  
18 and that's not a bad benchmark.

19 **MR. TREMBLAY:** Pierre Tremblay, for the  
20 record.

21 I guess we'll take note of your comments  
22 and we'll see what we can do for day two in terms of those  
23 broader comparisons.

24 **THE CHAIRMAN:** The other thing I'd like to  
25 -- first of all, I'd like to commend you for all the

1 reading material that you gave us this time. It was  
2 interesting. It kept us busy.

3 The last comment I would make is, you know,  
4 that I have seen the organization chart and I have seen  
5 your slide of the organization chart, Slide 2, and I  
6 understand that your CEO and your chief nuclear officer  
7 have a wide span of control.

8 But since you're appearing in front of us  
9 and since safety is in our name, I really thought you  
10 would find safety culture somewhere in this organization  
11 permanently displayed. Now, I'm a bit surprised that it's  
12 not really up there since it's one of your four quadrants,  
13 the safety culture, and one of the emphases.

14 So I still don't know exactly who is  
15 responsible for safety culture in your vast empire.

16 **MR. ROBBINS:** Wayne Robbins, for the  
17 record.

18 We will update that for day two. We'll  
19 show you. It is very elaborate and it's a very formal  
20 organization. So we'll certainly show you that on day  
21 two. We apologize for that.

22 **THE CHAIRMAN:** Thank you very much.

23 We now have to make some announcements. We  
24 will now move into closed session to deal with some of the  
25 security dimensions, and this CMD H6.1A and H6.1C, I

1 guess.

2 Kelly?

3 **MS. MCGEE:** This hearing will continue with  
4 day two on May 21<sup>st</sup>, 2010 at the Pickering Recreation  
5 Complex in Pickering, Ontario. The public is invited to  
6 participate either by oral presentation or written  
7 submission on hearing day two.

8 Persons who wish to intervene on that day  
9 must file submissions by April 21<sup>st</sup>, 2010.

10 The hearing is now adjourned to May 21<sup>st</sup>,  
11 2010.

12 **THE CHAIRMAN:** So this brings to a close  
13 the public hearing and I'd like to thank everybody for  
14 your patience and the insight into the operations here.  
15 Thank you.

16 --- Upon adjourning at 5:13 p.m. /

17 L'audience est ajournée à 17h13

18