

**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 17th, 2010

Le 17 février 2010

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

Salle d'audiences publiques
14^e 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 17th, 2009. Submissions from OPG
9 and CNSC staff were due on January 18th, 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 30th, 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 1st, 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 30th, 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 30th -- 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 18th 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 21st, 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 21st, 2010.

10 The hearing is now adjourned to May 21st,
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