

1 --- Upon resuming in public at 10:36 a.m.

2 **THE CHAIRPERSON:** Good morning, ladies and
3 gentleman, and welcome to this public hearing of the
4 Canadian Nuclear Safety Commission.

5 I would like to begin by introducing the
6 Members of the Commission who are with us today for the
7 hearing.

8 On my right is Dr. Moyra McDill and Dr.
9 Christopher Barnes. On my left is Mr. Alan Graham.

10 Monsieur André Harvey who was with us for
11 Day One can't be with us today unfortunately. And
12 therefore, he will not, Mr. Harvey will not participate in
13 the decision process.

14 In addition to Mr. Marc Leblanc, the
15 Secretary of the Commission, we also have Miss Samantha
16 Maislin-Dickson, who is the Acting General Counsel to the
17 Commission, with us on the podium today.

18 I would like to emphasise that the
19 Commission is a quasi-judicial administrative tribunal.
20 It's independent of all influence, be that political
21 government, private sector or non-governmental
22 organizations.

23 The Commission Members are appointed by the
24 Governor in Council to serve during good behaviour, not at
25 pleasure, on the basis of their exceptional achievements

1 and their excellent reputation.

2 Our responsibility is to ensure that the
3 use of nuclear materials and the operation of nuclear
4 facilities is done in a manner that protects the
5 environment, health, safety, security of Canadians. The
6 Commission does not have an economic mandate and its
7 decisions are not based on the economic impact of the
8 facility nor on the impact of our decision on the
9 facility. It is the safety and security of people and the
10 protection of the environment that are paramount.

11 I would also like to note that the
12 Commission is still on enhanced security status as are
13 many of the facilities that we regulate, including the
14 Chalk River laboratories today.

15 I will, if necessary, take measures to
16 ensure that security matters of a sensitive nature are not
17 discussed in public and we will, if necessary, move in
18 camera at any time for discussions on security matters.

19 The item on the agenda today is Hearing Day
20 Two on the matter of the application by Atomic Energy of
21 Canada Limited for an operating licence for its Dedicated
22 Isotope Facilities located at the AECL's Chalk River
23 Laboratories in Chalk River.

24 **MR. LEBLANC:** As the President has
25 indicated, this is Public Hearing Day Two. Day One of the

1 public hearing on this application was held on June 22nd,
2 2007. The Notice of Public Hearing 2007-H10 was published
3 on April 19th, 2007. The public was invited to
4 participate either by oral presentation or written
5 submission. August 13, 2007 was the deadline set for
6 filing by intervenors.

7 The Commission received 13 requests for
8 intervention. One submission was received shortly after
9 the deadline. Based on a consideration of the matter, a
10 panel of the Commission accepted the intervention.

11 The Commission strongly urges all parties
12 to file their submissions within the deadlines that are
13 set in the public Notice of hearings, in compliance with
14 the CNSC Rules of Procedure.

15 Presentations were made on Day One by the
16 applicant, Atomic Energy of Canada Limited, under
17 Commission Member Documents, or CMD 07-H16.1 and 07-
18 H16.1A, and by Commission staff under CMD 07-H16 and 07-
19 H16.A.

20 September 5th was the deadline for filing
21 of supplementary information. We know that supplementary
22 information has been filed by CNSC staff, AECL, as well as
23 intervenors.

24 **THE CHAIRPERSON:** With that preamble, I
25 would like to start the hearing today by calling on the

1 presentation from AECL outlined in Commission Member
2 Document 07-H16.1B. I note that Mr. Brian McGee is with
3 us today, but I understand that Dr. Torgerson, who is the
4 Senior Vice-President and Chief Technology Officer will be
5 involved in the presentation today.

6 Welcome, gentlemen, to the Commission and
7 the floor is yours, gentlemen. Thank you.

8
9 **Atomic Energy of Canada Limited:**
10 **Application for an operating**
11 **licence for its Dedicated**
12 **Isotope Facilities Located at AECL's**
13 **Chalk River Laboratories in**
14 **Chalk River, Ontario**

15
16 **07-H16.1B**
17 **Oral presentation by**
18 **Atomic Energy of Canada Limited**

19
20 **MR. TORGERSON:** Well, good morning, and
21 thank you very much, Madam Chair and members of the
22 Commission.

23 My name is Dave Torgerson. I am Senior
24 Vice-President and Chief Technology Officer of Atomic
25 Energy of Canada Limited.

1 With me today are Mr. Brian McGee who is
2 Vice-President and Chief Nuclear Officer, and Mr. Ron
3 Cullen, Vice-President Projects, as well as some of the
4 members of AECL's team who have been working on this very
5 important project.

6 We are here today in support of our
7 application for the renewal of the MAPLE reactors and New
8 Processing Facilities licences for a period of 47 months
9 to October 31st, 2011.

10 We have also requested the Commission
11 combine these licences into one licence for the Dedicated
12 Isotope Facilities, or DIF, which consist of MAPLE 1 and
13 2, the Iodine Production Facility and the New Processing
14 Facility.

15 Combining the licences and the 47-month
16 renewal period will align the DIF licence with the CRL
17 site licence and will facilitate the eventual inclusion of
18 the DIF licence into the CRL site licence.

19 We recognize and fully accept our
20 obligation to demonstrate to the Commission that we have
21 operated the Dedicated Isotope Facility safely and that we
22 will continue to do so with due regard to the environment,
23 security and Canada's international obligations. I want
24 to assure the Commission that I take this obligation very
25 seriously, as does our board of directors.

1 I would like to thank all of the
2 stakeholders who have either travelled here today to
3 participate in the licence renewal process or have
4 submitted written interventions. We are very appreciative
5 of the support and interest from our community
6 stakeholders.

7 In closing, Madam Chair, I want to
8 reiterate to the Commission that AECL is deeply committed
9 to the safe and responsible operation of our facilities.
10 We recognize our obligations to uphold the trust and
11 confidence of both the Commission as well as the public
12 and we will not compromise this trust.

13 I will now turn it over to Brian McGee and
14 Ron Cullen to provide a further update. Thank you for
15 your attention.

16 **MR. MCGEE:** Good morning, Madam Chair and
17 Members of the Commission. For the record, I am Brian
18 McGee, Vice-President and Chief Nuclear Officer of AECL.

19 At the Public Hearing Day One on June 22nd,
20 2007 we committed to provide certain information for Day
21 Two. Our Day Two CMD includes this information, as well
22 as an update on progress between Day One and Day Two.

23 Our presentation today covers key issues
24 from Day One, specifically the organizational structure
25 associated with the Dedicated Isotope Facilities,

1 elaboration of how the operations organization exercises
2 oversight of the project, an update on our plan and
3 schedule and an update on the positive coefficient of
4 reactivity issue.

5 We will also provide an update on progress
6 we have made at DIF since the Hearing Day One.

7 This slide shows how the Dedicated Isotope
8 Facilities and the MMIR project organizations are linked
9 and where the quality assurance functions sits.

10 The President and Chief Executive Officer
11 has overall responsibility for all of AECL's activities
12 and operations.

13 The authority for operation of AECL licence
14 facilities, including DIF, is delegated to the Chief
15 Technology Officer, Dr. Torgerson, as shown on the left-
16 hand side of this slide. This authority is further
17 delegated to me as the Chief Nuclear Officer.

18 The Dedicated Isotope Facilities Operations
19 Director, who is also the Facility Authority, reports to
20 me, to the General Manager of Reactor Operations. The
21 Facility Authority has the responsibility for the safe
22 operation of the Dedicated Isotope Facilities, including
23 approval of modifications to the facilities.

24 The Authority for the management of the
25 Dedicated Isotope Facilities project is delegated from the

1 President and Chief Executive Officer to the Chief
2 Operating Officer shown on the right-hand side of this
3 slide. This authority is further delegated to Ron Cullen,
4 Vice-President of Projects.

5 The MMIR Project Director reports to the
6 Vice-President of Projects. The Project Director is
7 responsible for the work undertaken by the MMIR project
8 personnel. He also has the overall line management
9 responsibility and accountability for the effective
10 implementation of the MMIR Project Quality Assurance
11 Program.

12 The Manager for Dedicated Isotope Facility
13 Quality Assurance works in the MMIR project organization
14 and reports administratively to the MMIR Project Director
15 and functionally to the Director of Corporate Standards
16 and CANDU products and services quality assurance. This
17 ensures a functional link to the corporate quality
18 assurance organization.

19 The Dedicated Isotope Facility Quality
20 Representative, or FQR, Facility Quality Representative,
21 works in the Dedicated Isotope Facility Operations
22 organization.

23 The FQR reports administratively to the
24 Director, DIF Operations, and functionally to the Manager,
25 DIF Quality Assurance.

1 Both the manager for DIF quality assurance
2 and the DIF Facility Quality Representative, or FQR, work
3 closely together to ensure integration of the quality
4 assurance function in both organizations.

5 This slide illustrates how the operations
6 organization exercises authority for overseeing all
7 activities in DIF, including project activities that
8 affect the facility.

9 The Facility Authority, or the Facility
10 Manager, approves all changes or modifications to the DIF
11 including their installation, ensuring that both
12 operations and maintenance considerations are taken into
13 account. All fieldwork is controlled by procedures
14 developed to meet the Operations Quality Assurance manual.
15 There is no distinction between execution of project work
16 or operations work from a quality assurance perspective.
17 In addition, the Facility Manager or Facility Authority
18 has to accept a system or a facility before it can be put
19 into service.

20 At the Hearing Day One there were questions
21 around our plan and schedule for the Dedicated Isotope
22 Facilities. I would like to clarify our intentions.

23 During the proposed 47-month licence
24 period, we intend to finish the PCR tests and resolve the
25 PCR issue.

1 This will likely require design changes.
2 The nature of these changes will be determined by the
3 results of the tests remaining to be done over the next
4 few months.

5 Following implementation of the design
6 changes we'll commission them and bring MAPLE 1 into
7 service. We note the proposed licence condition requiring
8 Commission approval prior to MAPLE 1 being turned over to
9 Operations. This would involve a public hearing at which
10 we would seek Commission approval.

11 We also intend to bring the New Processing
12 Facility into service and produce medical isotopes from
13 targets irradiated in MAPLE 1.

14 Finally, we will bring MAPLE 2 into
15 service. We in the Operations organization are relying on
16 our colleagues in the MMIR project to complete the project
17 and to deliver the facilities to us.

18 I will now turn the presentation over to
19 Ron Cullen, Vice-President of Projects, to update you on
20 our progress on the project.

21 **MR. CULLEN:** For the record my name is Ron
22 Cullen; Vice-President of Projects. Thank you, Brian.

23 Madam Chair, Commissioners, before I get
24 into the schedule itself I think it is important to point
25 out that the overall DIF schedule; that is, the schedule

1 for MAPLE 1, MAPLE 2, and NPF, depends very much on the
2 schedule and success of the PCR tests that are presently
3 underway on MAPLE 1.

4 We need to complete the test to determine
5 the solution to the PCR issue so that we can resolve the
6 issue and get MAPLE 1 up and running.

7 This needs to be completed prior to
8 resuming the commissioning of MAPLE 2, as shown on the top
9 path of this slide.

10 We will also need to irradiate targets in
11 MAPLE 1 so that we can complete active commissioning in
12 NPF, as shown on the bottom path. So the overall schedule
13 is highly dependant on the schedule and results for PCR
14 testing in MAPLE 1.

15 This slide and the next one focus on the
16 MAPLE 1 schedule. At the Day One Hearing we were asked to
17 return on Day Two with an updated schedule and to compare
18 our current schedule to the one we presented at the
19 hearing for the previous licence renewal in 2005.

20 We have provided this information in the
21 CMD and the next few slides are a summary.

22 This slide shows the key MAPLE 1 milestones
23 from the 2005 schedule, on the top line, and the same
24 milestones from the schedule we presented on Day One on
25 the bottom line. As indicated by the middle line, in

1 February 2006 the entire project was redefined as AECL
2 became owner of DIF.

3 The schedule was reviewed and revised and
4 the target in-service date moved to October 2008. This
5 meant that after February 2006 the schedule presented in
6 2005 was no longer applicable. As reflected by the dotted
7 line and the shaded milestones on the top line of this
8 slide, CNSC staff was kept fully apprised of this change
9 and we informed the Commission of this change in our mid-
10 term report in December 2006.

11 The key milestones, as presented at the Day
12 One Hearing in June of this year are shown on the bottom
13 line. The blue colour denotes the progress up to Day One
14 Hearing and the green represents the plan after Day One.

15 For example, we exited the guaranteed
16 shutdown state, or GSS, in April 2006 and operated MAPLE 1
17 at two kilowatts, as stated in the June 2006 and up to Day
18 One we were preparing for the PCR test at five megawatts.

19 Progress since Day One, and our plan going
20 forward; that is, the green part of the bottom slide -- on
21 this slide is expanded upon the next slide. This slide
22 expands the timeline from the Hearing Day One to mid-2008.

23 As a reminder, at the time of the hearing
24 on Day One we were preparing the MAPLE 1 core to measure
25 the PCR in the Series-300 tests which involves the use of

1 LEU driver fuel instead of HEU targets.

2 Between Day One and now we tested the
3 reactivity devices in MAPLE 1 and confirmed that the
4 safety systems have sufficient re-activity depth for the
5 modified core.

6 We measured the flow with a modified core
7 geometry and assessed the impact on the safety analysis to
8 confirm the adequacy of the safety case for this core
9 configuration.

10 We received approval from CNSC staff to
11 complete the Series-300 tests, allowing us to start the
12 power manoeuvre from low power to five megawatt to measure
13 the PCR. We completed the tests on August 24th.

14 I am pleased to report that all of these
15 activities were carried out diligently and safely. There
16 were no significant events associated with this work.

17 I will come back to the results of the most
18 recent tests after the next few slides on the schedule.

19 Our plan going forward over the next
20 several months, as shown in the bottom right of this
21 slide, is to complete the Series 400-A and 400 A-1 tests.
22 We expect these tests to be completed in early of the New
23 Year and we would expect our analysis of the results of
24 these tests will help determine the optimum design
25 solution to lower the PCR.

1 Our overall strategy, following these
2 tests, remains the same as we presented on the Day One
3 Hearing.

4 Our path forward, after the upcoming PCR
5 tests depends on the outcome of those tests. And as I
6 mentioned earlier, this means that subsequent schedule
7 contains large uncertainties so that we cannot present a
8 firm schedule for the steps after completion of these
9 tests at this time.

10 Nevertheless, we understand the
11 Commission's interest in the schedule and therefore we
12 propose to come back to the Commission following the PCR
13 testing to provide an update on both the progress and
14 schedule; that is, rather than speculate on exactly what
15 will take place and when it will take place after we
16 complete the PCR testing, we would prefer to update the
17 Commission when we are more confident in the longer term
18 schedule.

19 In the interim we will continue to have
20 regular communications with CNSC staff and keep them
21 informed of our progress. We will continue to provide
22 CNSC staff with updated working schedules to facilitate
23 CNSC staff resource planning.

24 We have found that this dialogue with CNSC
25 staff is an effective way to communicate an advance notice

1 of when requests for approval will be submitted.

2 Our working schedules for the PCR tests
3 typically assume that we will receive a response from CNSC
4 staff within one month of submitting our request for
5 approval. This allows time for CNSC staff review, receipt
6 of questions and comments and provision of supplementary
7 information.

8 This slide shows the key NPF milestones
9 from the 2005 schedule, on the top line, and the schedule
10 we presented on Day One on the bottom line.

11 Similar to MAPLE 1 schedule, the NPF
12 schedule was revised in February of 2006 when the project
13 was redefined.

14 The bottom line also shows progress in the
15 blue colour, up to the Hearing Day One in June of this
16 year.

17 This slide expands the timeline from the
18 Hearing Day One to mid-2008. Similarly, to the earlier
19 slide on the MAPLE 1 schedule, between Hearing Day One and
20 now we successfully completed design qualification tests
21 for the cementation system and we have started the tests
22 for the calcination system. This is significant progress
23 as these systems are critical to the success of the NPF.

24 We implemented all recommendations from the
25 HAZOP studies into the design changes required for the

1 active commissioning of NPF.

2 We continued inactive commissioning of NPF
3 systems, such as the MAPLE NPF airlocks and waste disposal
4 canisters as part of the commissioning work.

5 We prepared commissioning procedures for
6 other systems, such as the active ventilation system, the
7 liquid waste system and the vacuum transfer system.

8 Going forward over the next several months,
9 we will complete the design qualification test for the
10 calcinations system; continue implementation of the HAZOP
11 recommendations required for the in-service and the
12 implementation of additional design changes.

13 Beyond that, the schedule for NPF is
14 dependent on the MAPLE 1 schedule, because active
15 commissioning in NPF; that is, commissioning with
16 irradiated targets relies on our ability to irradiate the
17 targets in MAPLE 1. We propose to update the Commission
18 on NPF progress at the same time as the MAPLE 1 update.

19 As I mentioned earlier, we completed the
20 300-Series test a few weeks ago providing information on
21 the effects of the HEU targets on the PCR. One proposed
22 mechanism that bowing of the targets; that is, small
23 deformation of the targets due to temperature
24 differentials, has contributed to the PCR.

25 The most recent test was designed to

1 investigate the effects of the HEU targets by replacing
2 them with LEU driver fuel. The results showed about a 30
3 percent reduction in the PCR, which is within the expected
4 range. This reduction confirms that the HEU targets are a
5 significant contributor to the PCR.

6 The next test will investigate the
7 contributions from other phenomena believed to contribute
8 to the positive PCR.

9 After all of these tests are completed and
10 evaluated we will be in a better position to identify the
11 specific design changes required to finally resolve the
12 PCR issue, and at the same time to provide an update
13 schedule for the next steps.

14 This slide summarizes the independent
15 support of other organizations provided on the PCR. The
16 PCR measurements, how they are measured, processing and
17 analysis were reviewed by two independent and third-party
18 organizations, Brookhaven National Laboratory in the
19 United States and INVAP in Argentina. These reviews
20 concluded that all measurements and data analysis were
21 done correctly. Both organizations made recommendations
22 which have been included in the PCR test plan.

23 The Idaho National Laboratory has been
24 contracted to provide an independent calculation to
25 support AECL's work to investigate the positive power

1 coefficient of reactivity issue.

2 The scope of these independent calculations
3 were described in our CMD for the Day One Public Hearing.

4 I will now turn the presentation back to
5 Mr. Brian McGee.

6 Thank you.

7 **MR. MCGEE:** Thank you, Ron.

8 Brian McGee for the record.

9 Over the last couple of months we have also
10 completed other tests. The MAPLE 2 Reactor has been
11 defueled and now resides in the guaranteed shutdown state.

12 After receiving the CNSC staff report from
13 the April 2007 commissioning audit we prepared an action
14 plan to resolve the items detailed in the report. The
15 actions are now being implemented and we are actively
16 resolving the outstanding issues.

17 We have continued to operate MAPLE 1 safely
18 and to commission the New Processing Facility safely and
19 we will continue to do so.

20 Since Hearing Day One we have had no free
21 day resets and no lost time accidents in the Dedicated
22 Isotope Facilities. We continue to raise impact reports
23 as a vehicle to prevent significant events.

24 In conclusion, we believe that our
25 performance and progress since Public Hearing Day One

1 supports our application for a 47-month renewal of DIF
2 licence. Our Commission Member Document and presentation
3 today have responded to the questions raised during the
4 Public Hearing Day One.

5 We have also updated the Members of the
6 Commission on activities at DIF since Day One. In
7 particular, we are pleased to report the progress of the
8 series 300 test which have confirmed one significant
9 contributor to the positive PCR.

10 We have been in discussions with the CNSC
11 staff on the proposed modifications to the DIF licence
12 included in their CMD. We agree with these proposed
13 changes. Specifically with respect to the clauses on
14 criticality safety, these clauses are consistent with
15 those added to the Chalk River Laboratory site licence
16 last year. While we are still gaining experience with
17 those clauses we have no concerns with adding them to the
18 Dedicated Isotope Facilities licence at this time.

19 In conclusion, I would like to reiterate
20 that AECL staff has operated the Dedicated Isotope
21 Facilities in a safe and competent manner, and I give you
22 my commitment that we will continue to do so through the
23 proposed licence period.

24 We are committed to the safe operation of
25 our site and I am accountable to ensure that our

1 operations meet regulatory requirements and are carried
2 out safely and with due regard to the environment,
3 security and Canada's international obligations.

4 Thank you. And we would be pleased to
5 answer any questions.

6 **THE CHAIRPERSON:** Thank you very much,
7 gentlemen.

8 We will now turn to the CNSC staff for
9 their presentation outlined in CMD 07-H16.B, and I will
10 turn to Mr. Barclay Howden, the Director General
11 responsible for this facility.

12 Mr. Howden.

13
14 **07-H16.B**

15 **Oral presentation by**

16 **CNSC staff**

17
18 **MR. HOWDEN:** Thank you.

19 Madam Chair, Members of the Commission, for
20 the record, my name is Barclay Howden. I am the Director
21 General of the Directorate of Nuclear Cycle and Facilities
22 Regulation.

23 With me today are Mr. Miguel Santini,
24 Director of the Chalk River Laboratories Compliance and
25 Licensing Division; Mr. Bruce Pearson, Project Officer for

1 the MAPLE reactors; Mr. Étienne Langlois, Project Officer
2 for the New Processing Facility, and the rest of our
3 facility assessment and compliance team.

4 CNSC staff has reviewed the application
5 from AECL to renew the operating licenses for the MAPLE
6 Reactors and New Processing Facility at Chalk River
7 Laboratories and to replace these individual licenses with
8 one consolidated licence for the Dedicated Isotope
9 Facilities and has formed a position on the application
10 and put forward recommendations for your consideration.

11 Before we proceed with the detailed
12 presentation I wish to note a typographical error made in
13 part three of the proposed licence. The expiry date for
14 the proposed licence is stated as October 30th, 2011.
15 However, it should state October 31st, 2011.

16 I will now turn the presentation over to
17 Mr. Pearson.

18 **MR. PEARSON:** Good morning, Madam Chair and
19 Members of the Commission. For the record, my name is
20 Bruce Pearson, Project Officer for the MAPLE Reactors.

21 Atomic Energy of Canada Limited has applied
22 for renewal and replacement of licenses to operate the
23 MAPLE Reactors and New Processing Facility at the Chalk
24 River Laboratories.

25 CNSC staff prepared CMD 07-H16 and 07-H16.B

1 which contained recommendations for the Commission on this
2 application. This presentation provides an update on
3 progress made since Hearing Day One.

4 Our presentation has four sections:

5 First, to update the Commission on
6 additional information made available since Day One that
7 is relevant to our assessment of the safety areas,
8 outstanding licensing actions and project schedule;
9 second, to identify changes to the proposed operating
10 licence; third, to state our overall conclusions, and
11 finally, to make recommendations to the Commission.

12 Updated information on safety areas will
13 cover operating performance, performance assurance; in
14 particular commissioning and quality assurance, and
15 environmental protection.

16 In the area of operating performance we can
17 state that there have been no events of major significance
18 that have been reported in the past three months. This is
19 a very limited period of operation. However, the result
20 may be viewed as ongoing support for the improving trend
21 and performance that was identified in CMD 07-H16.

22 In the area of performance assurance, and
23 in particular commissioning and quality assurance, we can
24 inform the Commission that the report for the Dedicated
25 Isotope Facilities commissioning and quality assurance

1 program audit, which was referenced in CMD 07-H16, has now
2 been issued. As a result of the audit CNSC staff issued
3 five action notices and one recommendation.

4 In addition, since Hearing Day One several
5 directives from the 2003 commissioning QA audit have been
6 closed. However, two directives still remain open. One
7 is a repeat finding in the 2007 audit and therefore cannot
8 be closed, and the second requires further improvements to
9 be made to AECL's QA program review process before closure
10 can be achieved.

11 In the area of environmental protection we
12 can report that the inspection referenced in CMD 07-H16 of
13 the implementation of the environmental protection program
14 at the Dedicated Isotope Facilities was completed during
15 July 23rd to 25th of this year.

16 As a result of the inspection no
17 significant non-compliances were identified. However, the
18 need for some improvements to document control and program
19 management were noted.

20 CNSC staff concluded from the inspection
21 that the program meets regulatory requirements and the
22 inspection confirmed a "B" rating for implementation.
23 This table is reproduced from the Hearing Day One CMD.

24 To summarize, and remind the Commission
25 members of the ratings given to the safety areas for the

1 MAPLE reactions and New Processing Facility, as indicated,
2 there has been no change in the CNSC staff assessment of
3 these areas since Day One.

4 Since Hearing Day One some progress has
5 been made towards resolution of the positive power
6 coefficient of reactivity. Despite some schedule delays
7 experienced since Day One the 300-Series of PCR tests are
8 now complete.

9 The preliminary results from these tests
10 show that the presence of moly targets in the MAPLE
11 reactor core accounts for 36 percent of the magnitude of
12 the measured positive PCR.

13 This result would indicate that other major
14 contributors to the positive PCR may exist. Such other
15 potential contributors are intended to be assessed during
16 the next phase of PCR tests and that is the 400-Series of
17 tests.

18 Since Hearing Day One the MAPLE 2 Reactor
19 has been placed into the alternate guaranteed shutdown
20 state as per the approved operational limits and
21 conditions document.

22 The MAPLE 2 Reactor will remain in the GSS
23 unless removal is granted under licence condition 11.2 of
24 the proposed Dedicated Isotope Facilities operating
25 licence.

1 In section 3 of CMD 07-H16.B CNSC staff
2 provided tentative dates for in-service operation of the
3 MAPLE 1 and MAPLE 2 Reactors. However, as stated in CMD
4 07-H16, these dates are uncertain and highly dependant
5 upon the outcome of the PCR test program. Because of this
6 uncertainty AECL has proposed to present an updated plan
7 and schedule at a public meeting of the Commission after
8 the PCR tests are completed.

9 Since Hearing Day One there have been some
10 additional changes to the proposed operating licence for
11 the Dedicated Isotope Facilities. In particular, the
12 pressure boundary licence condition has been changed to
13 require the use of updated CSA standards. A licence
14 condition has been added to specify requirement for
15 criticality safety and Appendix A has been updated to
16 reference the latest version of the Chalk River laboratory
17 site security report.

18 Since Hearing Day One CNSC staff's
19 conclusions have remained unchanged. These conclusions
20 are that an environmental assessment under the *Canadian*
21 *Environmental Assessment Act* is not required for the
22 proposed licence renewal; that AECL is qualified to carry
23 on the licensed activities; and that AECL has made, and in
24 the opinion of staff, will continue to make adequate
25 provision for the protection of the environment, the

1 health and safety of persons, and the maintenance of
2 national security and measures required to implement
3 international obligations to which Canada has agreed.

4 As stated in CMD 07-H16 and CMD 07-H16.B,
5 CNSC staff recommends that the Commission accept its
6 assessment that the conduct of an environmental assessment
7 of this project under the *Canadian Environmental*
8 *Assessment Act* is not required; delegate the authority to
9 staff to make approvals pursuant to licence conditions as
10 detailed in CMD 07-H16 and summarized in section 8.2 of
11 that CMD and renew/replace the proposed operating licence
12 to operate the Dedicated Isotope Facilities for a 47-month
13 period to October 31st, 2011.

14 That concludes my presentation. I will now
15 return the floor to Mr. Howden.

16 **MR. HOWDEN:** Thank you, Barclay Howden
17 speaking.

18 I just wanted to be clear on what the
19 recommendation on the licence is. Currently there are two
20 licences; one for the MAPLE Reactors and one for the New
21 Processing Facility. So if the Commission accepts the
22 recommendation from staff the result will be a single
23 licence for the Dedicated Isotope Facilities.

24 And that concludes our presentation and
25 staff is ready to respond to questions.

1 Thank you.

2 **THE CHAIRPERSON:** Thank you very much.

3 We will open the floor for round one of
4 questions. We will start with Dr. McDill.

5 **MEMBER McDILL:** Thank you.

6 At the end of the last meeting I asked for
7 the PCR resolution document and I was pleased to see it in
8 today's information.

9 But I have to tell you that it troubles me
10 and I think I'd like to start with -- I don't think it
11 appeared on the screen unless looking down that positive
12 PCR resolution program on Figure 9, on page 24, of the --
13 of AECL's document.

14 Does AECL have that as an overhead, as a
15 slide?

16 **MR. MCGEE:** We don't have it as a slide.

17 **MEMBER McDILL:** That's fine, then I'll
18 discuss it.

19 **THE CHAIRPERSON:** I think -- I believe we
20 can put it on as an overhead, can we not? Could we get
21 the document -- the Secretary is bringing it down and we
22 can put it up.

23 **MEMBER McDILL:** Thank you, Madam Chair;
24 I'll wait then for a minute.

25 **THE CHAIRPERSON:** Unless we can enlarge it.

1 That's all we've got, but at least leave it there.

2 **MEMBER McDILL:** Thank you for that.

3 I wonder if I could ask -- although it's
4 very small -- AECL to point out roughly where as of today
5 we are positioned on that chart, on that diagram.

6 **MR. MCGEE:** Brian McGee for the record.

7 I'll ask Jean-Pierre Labrie to answer that
8 question please.

9 **MR. LABRIE:** For the record my name is
10 Jean-Pierre Labrie. I'm the Director of Special Projects,
11 Commercial and Client Interface.

12 If you start from the bottom of the
13 diagram, above the first diamond, from the bottom of the
14 diagram, you see "test plan" and "in reactor tests". This
15 is where we are currently on our program.

16 **MEMBER McDILL:** Thank you.

17 My focus will be on the diamond below that.
18 I'd like to ask Mr. Howden staff -- pardon me -- on the
19 last day, and I think I'll read it back; Mr. Howden was
20 addressing a question and he said the first part goes back
21 to the original safety analysis report that was performed,
22 setup probably about 10 years ago or so and that report
23 was accepted based on the design that was proposed. And
24 so as we go forward, you know, some of the principles
25 within the safety report, such as the negative PCR has

1 been carried forward.

2 So the original safety analysis is based on
3 a certain design and the triangle or diamond below, test
4 plan and in reactor test says "acceptably low or negative
5 PCR."

6 And I would like to ask staff, if the
7 original safety analysis report was based on a negative
8 PCR what are the implications of that diamond?

9 **THE CHAIRPERSON:** I'd just like to
10 elaborate that Dr. McDill was noting from the transcripts
11 from Day One pages -- I believe it's 91 and 92 -- 91 and
12 92. So that's the material that we're looking at.

13 And turn it over to Mr. Howden.

14 **MR. HOWDEN:** Barclay Howden speaking.

15 The position that I stated there remains
16 what I had stated during the mid-term where what we were
17 looking at is the reactor design was such that the PCR was
18 supposed to be negative and then the entire safety
19 analysis was based on that, plus all sorts of other
20 considerations. Our position remains the same today, that
21 the safety analysis that was used for the original
22 issuance of the licence is that there would be a negative
23 PCR. Our position is that the PCR should be negative.

24 We also stated that if it wasn't negative
25 we would have a difficult time accepting that, and we have

1 not gone through, in detail, to develop what our
2 acceptance criteria would be for "acceptably low". In our
3 view the -- but we are working our way through that
4 process.

5 However, in our view it's up to AECL to
6 propose their design changes, redo their safety analysis
7 based on that design and then propose it that it's an
8 acceptably safe operation.

9 So at this point we remain of the position
10 that AECL should be working towards returning the PCR to
11 negative for this reactor to support the safety case which
12 supports the original design.

13 **MEMBER McDILL:** Thank you. In the original
14 Safety Analysis Report -- can you elaborate on the
15 requirements for containment versus confinement with
16 respect to negative PCR?

17 **THE CHAIRPERSON:** Perhaps we'll start with
18 the licensee and then move to the staff afterwards.

19
20 **MEMBER McDILL:** Thank you, Madam Chair.

21 **THE CHAIRPERSON:** So we are looking at the
22 complete envelope.

23 **MR. McGEE:** Brian McGee for the record.

24 I'll ask Albert Lee to answer that
25 question.

1 **MR. LEE:** Albert Lee for the record; the
2 Safety and Licensing Manager for the MMIR Project.

3 In the original Safety Analysis Report that
4 was produced in 1998, we analyzed all of the design basis
5 accidents based upon a vented confinement concept for the
6 building. The use of -- the crediting of negative
7 reactivity feedback, as power increased, was primarily
8 used in the accident analyses for loss of regulation
9 accidents. These are accidents where one postulates an
10 uncontrolled increase in reactor power as a result of a
11 reactivity addition.

12 For those events we demonstrated that the
13 two safety systems that are provided could both
14 effectively shutdown the reactor prior to any fuel failure
15 occurring and therefore, the dose to the public from those
16 events was always analyzed to be zero.

17 Even today, for the safety analyses that we
18 have done, support the PCR tests. For the 100-Series,
19 200-Series and 300-Series tests we've analyzed it with the
20 assumption of a positive power coefficient reactivity. We
21 have demonstrated in the safety cases that all of the loss
22 of regulation accidents are safely terminated by action of
23 the first and second shutdown systems.

24 Both are demonstrated to be effective and
25 no fuel failure occurs and therefore, the dose to the

1 public is always zero. As a result, there is no
2 requirement for us to credit the use of a containment.

3 **MEMBER McDILL:** Does staff concur that
4 there is no requirement to credit the use of the negative
5 PCR for containment?

6 **MR. HOWDEN:** Barclay Howden speaking.

7 I'm going to ask Bruce Pearson to speak to
8 the Safety Analysis Report that was done in 1998 and sort
9 of the process that we have reached today.

10 **MR. PEARSON:** For the record, Bruce
11 Pearson; Project Officer for the MAPLE Reactors.

12 When we looked at the original safety case
13 we looked at the overall defence and depth included, and
14 that included crediting inherent safety features, such as
15 the negative feedback that the PCR would provide, and also
16 engineered design features like SS1 and SS2 which met
17 requirements for independence, diversity, et cetera.

18 Based on the combination of inherently safe
19 features and engineered design features, we concluded that
20 the need for containment was obviated by the fact that the
21 probability of any accidents that would challenge
22 containment would have been extremely low.

23 So basically, the combination of the design
24 features provided in the original design allowed us to
25 come to the conclusion that confinement would be an

1 appropriate measure to have in place.

2 **MEMBER McDILL:** Thank you.

3 On page 23 of the same report there is a
4 reference to the higher margin than that assumed in the
5 safety case, a PCR value of 0.402. Is that AECL's
6 position that that's as high as it's going to go or might
7 it go higher or lower?

8 **MR. MCGEE:** Brian McGee for the record.

9 I'll ask Albert Lee to answer that
10 question.

11 **MR. LEE:** We've developed the value of
12 0.402 milli-k per megawatt as a bonding limit to be used
13 in the safety analysis by analyzing all of the data that
14 we collected on the power coefficient for reactivity, both
15 in tests done in -- primary tests done in 2003 and further
16 supported by the data collected in tests done in 2007.

17 We took the best estimate value of the
18 measured power coefficient reactivity from those tests.
19 We increased the value by approximately two standard
20 deviations. In other words, what we did was we increased
21 it by the uncertainties allocated at the 95 percent
22 confidence level one-sided limit to arrive at a constant
23 value of 0.402 milli-k per megawatt. We assume that it
24 would be a constant value in the safety analysis for all
25 power transients, for all power.

1 **MEMBER McDILL:** Is staff comfortable with
2 that number?

3 Maybe I should rephrase that: Does staff
4 agree with that number as opposed to ---

5 **MR. PEARSON:** For the record, Bruce
6 Pearson; Project Officer for the MAPLE Reactors.

7 When we -- the basis for acceptance to
8 proceed with the tests is based on AECL demonstrating that
9 it's adequately safe to proceed with the tests. Included
10 in the assessment that we do, is we recognize that in
11 performing these tests it's for a very short period of
12 time, so that we do give a good deal of consideration to
13 the fact that the time at risk has been minimized and it's
14 just a short term test that's being done.

15 Other factors that we consider in looking
16 at the safety of the test is the measures in place to
17 confirm that the design itself is safe and catering for
18 the test.

19 The value of the PCR, we reviewed a
20 considerable amount of data and also the information that
21 AECL produced and for the tests that were being done and
22 that have been approved to date, we were in agreement with
23 the acceptability of the 0.402 that was used in developing
24 the safety case.

25 **DR. McDILL:** Thank you.

1 My last question then for this round is, is
2 that 0.402 the number that is going to be used in Figure
3 10, where you -- it's not up there -- it's on Figure 10 of
4 the AECL document, there is a diamond near the bottom
5 right-hand corner, which is PCR greater than zero, less
6 than in the safety case. There is also a diamond at the
7 safety case for 8 megawatts in that same part of the
8 block.

9 Is that the number that is going to be used
10 there or is there a different number that is going to be
11 used there when we get to the safety case for 8 megawatts?

12 **MR. MCGEE:** Brian McGee, for the record.

13 I will ask Albert Lee to respond.

14 **MR. LEE:** Albert Lee, for the record.

15 The value of the positive power coefficient
16 reactivity that we would use in a safety case to support
17 our application to operate up to 8 megawatts will be
18 dependent upon the final results of the PCR tests and the
19 measures that we implement to mitigate the positive PCR.

20 We will not necessarily use a value of
21 0.402 milli-k per megawatt for the PCR value and the
22 safety analysis if we're able to demonstrate that we have
23 effective measures to mitigate it and significantly reduce
24 the value.

25 **DR. MCDILL:** Thank you, Madam Chair.

1 **THE CHAIRPERSON:** I would just like to
2 return a bit for just a follow-up question to the AECL.
3 Dr. McDill started by the Figure 9, in terms of the
4 program and asked staff about their view as to what was
5 acceptably low or negative PCR. I would like to have
6 AECL's view as to how that diamond would be defined?

7 **MR. MCGEE:** Brian McGee, for the record.

8 I will ask Albert Lee to answer the
9 question, but I want to emphasise that we are focusing on
10 reducing the PCR and eliminating it at this point in time.

11 I will ask Albert to -- if we came to the
12 point where that was part of our decision-making process,
13 explain how we would go about that.

14 **MR. LEE:** Thank you. Albert Lee for the
15 record.

16 If you turn to Figure 10 on page 25 of the
17 AECL Commission Member Document, you will see a figure
18 that shows the PCR testing logic chart.

19 The diamond that was on Figure 9 is further
20 elaborated in terms of the bottom part of that figure
21 where we looked to -- we asked questions about whether we
22 have successfully made the PCR negative, as shown in a
23 number of diamonds leading to defining a safety case to
24 operate at 8 megawatts.

25 If we are successful and to find it to be

1 negative and measure it to be negative and confirm it to
2 be negative, we will use those results to define a
3 bounding value to use in the safety case that would be
4 acceptably low.

5 If you go on, there is a diamond in the
6 lower right-hand corner that shows a decision box for
7 where the value of the PCR is greater than zero but less
8 than the value that we would use in the safety case.

9 The value we would choose would be a value
10 that would effectively demonstrate that for all of the
11 design basis events -- those consequence to members of the
12 public and to the workers, and to onsite staff, meet the
13 same criteria that we used in the original safety analysis
14 in the FSAR.

15 If we could demonstrate that we have
16 effective trip coverage and meet all the safety analysis
17 acceptance criteria for a value of the PCR that is
18 acceptably low but greater than zero, we would then make
19 an application to operate the reactor, at up to 8
20 megawatts while we develop a longer term solution to make
21 it negative.

22 **THE CHAIRPERSON:** Sorry, I don't quite
23 understand this because it is new information in terms of
24 the process here.

25 So correct me if I'm wrong in my

1 understanding of this. My understanding then is if going
2 down Figure 10, the PCR testing logic chart, going down
3 the right-hand side and again the Secretary has sought to
4 put it up, but it's pretty difficult to read on there, but
5 that is the chart you are referring to.

6 If we go down the side and we get to the
7 block which is PCR that is greater than zero and less than
8 some -- yet unspecified number, if I understand that, and
9 that would have a specific safety case attached to it
10 which would be evaluated within the design specifications
11 and there would be modifications as necessary.

12 Then, if I understood you, there would be
13 an approval that -- I presume and I'll ask staff to help
14 me understand that -- that would be submitted to the
15 staff. I suppose that would have implications on what
16 staff have suggested in terms of returning to the
17 Commission. So what would the staff do? What would the
18 staff be recommending based on this licence to come to the
19 Commission?

20 And then AECL would apply for approval to
21 operate that but it would be a two-pronged approach. This
22 is where I get very unclear. It would be approval based
23 on that safety case to operate the MAPLE at 8 megawatts,
24 while at the same time seeking further investigations in
25 terms of moving towards the negative PCR or -- that part

1 it went too quickly for me to understand, Mr. McGee.

2 **MR. McGee:** Brian McGee, for the record.

3 First, I'd like to emphasise that we would
4 not ask staff or present to staff a request to operate or
5 a safety analysis that we weren't first satisfied was an
6 acceptable safety case. The 4.02 (sic) milli-k number
7 that was discussed earlier is a bounding scenario that is
8 being used for the PCR testing at this time and is a
9 bounding scenario under the current safety analysis.

10 If we were unsuccessful in completely
11 resolving the PCR issue through design changes, the safety
12 case would be revised to a new bounding number.

13 So at this point, it is somewhat
14 speculative but I will ask Albert Lee to elaborate, if you
15 would like to, on that response and to help clarify where
16 our thinking is.

17 But at this point, it is somewhat
18 speculative to go to any decision-making type of criteria
19 at this point because our focus is still to go through the
20 PCR testing, to undertake to resolve the PCR issue, and
21 our belief is that we can reduce it to zero or negative.

22 But I will ask Albert Lee to respond.

23 **MR. LEE:** Thank you. Albert Lee, for the
24 record.

25 I agree with everything that Mr. McGee has

1 said. The current value of 0.402 milli-k per megawatt is
2 the bounding value that we are using for the current
3 series of PCR tests.

4 Our intent is to define possible remedies
5 to reduce the value of the PCR. Based upon how far we are
6 able to reduce the value of the PCR, we will revise and
7 update the safety analysis to support a mode of operation
8 with whatever the remedies are installed in the core.

9 At this time we are not able to define how
10 low that value of the PCR would be and what we would use
11 in the safety analysis. So we would have to come back
12 with that after we've got the design changes.

13 **THE CHAIRPERSON:** But was my interpretation
14 of Figure 10 correct?

15 **MR. LEE:** Yes. Your interpretation of
16 Figure 10 is correct. Coming down the right-hand side, we
17 are looking at trying to make it as low as possible,
18 preferably negative and depending on the result and
19 depending on whether we believe we have an acceptable
20 safety case to try and proceed to operate.

21 **THE CHAIRPERSON:** Could I have staff's
22 comment please?

23 **MR. HOWDEN:** Thank you. Barclay Howden
24 speaking.

25 The tests that are ongoing now are

1 important to measure the PCR under different conditions
2 with certain changes to the core and we've reviewed the
3 safety cases with the time at risk and other
4 considerations, we're satisfied they're being done safely.

5 But the tests are also being done to
6 understand the phenomena and this is -- this is an issue.
7 It's one thing to have the value of what it is, but to --
8 you need to understand it as well, because if you
9 understand it then it gives you a degree of predictability
10 because then you can model it then you can validate it and
11 then when you go through your safety and accident
12 assessments and you're using your models, you have a high
13 level of confidence.

14 So I just wanted to emphasize that the
15 measurement is important, but understanding it is equally
16 important.

17 And so if someone couldn't model it but
18 they were confident of a bound, they'd have to be very
19 convincing that the safety case is then bounded.

20 And -- and I think that's the issue that
21 staff is struggling with, is that you can measure it but
22 can you understand it well enough to either model it or
23 bound it and -- and such that when a safety case is
24 presented, you say, yes, have a high level of confidence
25 that you are in that safety envelope.

1 So what we're seeing for the tests are not
2 only measurements but also understanding and you can see
3 each test has a different sort of thing to try to get an
4 idea of what the contribution is.

5 So I think we agree with AECL that there's
6 a lot of -- a lot of things that still have to be done to
7 reduce the uncertainties.

8 From our perspective, from a regulatory
9 perspective, the licence that we have and the conditions
10 that we have, we feel is sufficient to provide us with
11 regulatory control to make sure that nothing goes forward
12 unless it's safe and if, in our opinion, it isn't, it just
13 is shut down, you go into the GSS until you ponder your
14 next move.

15 And so when we look at their plans, we look
16 at it from -- we have two considerations. I think last
17 time I said that activities are very important because
18 they have to be sequenced to make sure that you benefit
19 from the last test before you go to the next one and
20 that's very much focused on being effective, from a
21 regulatory standpoint.

22 The timing, even though we've downplayed
23 it, it does have importance in terms of managing your
24 resources and trying to be efficient. Like we like to --
25 we -- we block out our staff's time to do work and so if

1 we have a good idea of the timing we can be more efficient
2 because if you miss a time slot, that staff member may be
3 unavailable for another month or so.

4 So, I think at this point we're confident
5 with the regulatory regime.

6 Where we're uncertain is -- is the
7 understanding of the phenomena and if that could be done
8 that will improve things greatly because you will have a
9 measure and you'll understand why it's there; then you can
10 actually take it and start to engineer solutions to your
11 problem.

12 Does that respond to your question, Madame?

13 **THE CHAIRPERSON:** Well you've actually
14 raised another -- another question.

15 But just so that I follow my train of
16 thought here, so when the staff looks at Figure 10, which
17 AECL referred to and I looked at the questioning on the
18 right-hand side of Figure 10 at the end.

19 So the staff are saying that they
20 understand Figure 10 and they understand the -- the
21 options that have been put forward, understanding, you
22 know, what Mr. McGee said in terms of the direction AECL
23 wishes to go. And -- and understanding that in your
24 recommendations to the Commission in terms of when we
25 would -- some of the hold points and when we would come

1 back, could you just delineate your understanding of that
2 lower, right-hand side of the document and what exactly
3 would the Commission and therefore in a -- I think you've
4 recommended a one-day public hearing -- what would be
5 evident in that -- in that lower, right-hand corner, to
6 the Commission?

7 **MR. SANTINI:** Miguel Santini for the
8 record.

9 The lower box in -- in Figure No.10 in the
10 AECL submission coincides with one of the conditions in
11 the proposed licence which basically the reactor will
12 switch to the in-service status, at which time we'll come
13 to the Commission.

14 Now, what we have to understand at that
15 moment -- at that moment we will have to see how -- what
16 AECL has put in place in order to resolve the PCR issue
17 and the differences for now in interpretations is what
18 resolution of the PCR is.

19 In AECL's mind, resolution of the PCR is as
20 low as achievable, considering that the safety case
21 supports operations.

22 And in our mind, and for now is the PCR
23 ought to be negative in order to -- to come back to
24 original safety basis and licensing basis in -- in the
25 original operating licence.

1 In AECL's submission, we would expect that
2 AECL would submit a new safety case, a safety case that
3 will go back to the origins justifying what additional
4 measures that had to be put in place in order to be able
5 to operate at one with a positive PCR.

6 Now I would like to emphasize what -- what
7 Mr. Howden said with respect to the phenomena in the core.

8 The problem is not only the value of the
9 PCR but the understanding of what causes it. When you
10 don't understand what causes it you try to assign in such
11 a way that you always are on the safe side.

12 When you don't understand then the safety
13 side -- the safe side is negative because when it is
14 positive you basically you don't -- you can't capture
15 everything with the models and you have an undesirable
16 effect to safety.

17 So basically we will expect AECL to come
18 back to us with a -- with a very robust new safety case
19 where they have demonstrated all of the engineering
20 solutions to address this -- this value but, at the same
21 time, we would expect them to -- to have a very good
22 understanding of what is causing the positive PCR.

23 **THE CHAIRPERSON:** That opens a set of
24 questions, but I'll let my colleagues go and then I'll
25 come back if it's necessary to come back to that.

1 I think, if you agree, Dr. McDill, we'll
2 move to Dr. Barnes.

3 Dr. Barnes.

4 **MEMBER BARNES:** If I can continue the
5 questions on the PCR, if I may.

6 This has been going on for many years now
7 and I guess I'm surprised at some of the diagrams provided
8 by AECL that suggest -- for example, on your -- your
9 schedule, page 10, where you have an in-service in about
10 one year from now.

11 And given the fact that we're still --
12 clearly don't understand the issue in the way that AECL
13 has just said, I'm surprised that you would be bold enough
14 to suggest that you would be in-service, what appears to
15 be the fall of 2008.

16 Is this realistic or just based on a whole
17 set of assumptions that if they all work that might be
18 conceivable? Given the time it would take to demonstrate
19 the case that's just been stated by -- by staff, I just
20 personally can't see how you could possibly be in-service
21 one year from now.

22 **MR. MCGEE:** Brian McGee, for the record.

23 Our focus, right at this point in time, is
24 to execute the PCR test plan. It's a well thought out,
25 well-detailed integrated plan with a series of activities

1 that were carefully networked as we go through it.

2 At the outcome of that, we'll have a better
3 understanding of the time that it will take to complete
4 whatever design changes and activities are required to
5 achieve that.

6 The schedule, beyond the current PCR
7 testing regime, is primarily established for business
8 planning and financial planning and financial decision-
9 making purposes. So at this point in time, from a
10 technical perspective, the schedule that we're focusing on
11 is the schedule to go through the PCR test plan in a
12 rigorous and prudent manner and at the end of that plan we
13 expect to be in a position where we have a greater
14 understanding of the design changes that will be required
15 to achieve the in-service of the facility.

16 **MEMBER BARNES:** I come back to the test
17 plan and through this process we certainly encouraged and
18 pleased to see that AECL, for some time now, has been
19 receiving external advice. You had that on the coloured
20 boxes of the previous overhead, which is Figure 9, from
21 INL, BNL and INVAP.

22 Could you -- just a couple of questions on
23 that, could you give us some kind of verbal assessment of
24 -- of the value you found in those external reviews,
25 relative to your own thinking. Were they substantial, the

1 contributions, were they sort of simply incremental?

2 **MR. MCGEE:** Brian McGee for the record.

3 I'll ask Jean-Pierre Labrie to answer.

4 **MR. LABRIE:** For the record, my name is
5 Jean-Pierre Labrie.

6 We have been working with Brookhaven
7 National Laboratory, Idaho National Laboratory and INVAP
8 for a long time now. We've had very regular dialogue and
9 we still have dialogues and meetings with these
10 organizations.

11 Basically the outcome of the work that
12 Brookhaven has done was to reconfirm that the analysis
13 methods that AECL is using to calculate the PCR from the
14 data is correct.

15 From INL, what we have as an output is that
16 the models that we've been using are modeling that they've
17 reproduced independently from us, is correct and from
18 INVAP it was mainly their insight into their design of
19 reactors and obviously they have provided very valuable
20 recommendations that we have incorporated in our PCR logic
21 diagram to identify the causes for the positive PCR and
22 the design changes that will be implemented to resolve
23 these.

24 **MEMBER BARNES:** And on Figure 9, would we
25 expect those external interactions to continue, in the

1 lowest part of the diagram?

2 **MR. MCGEE:** Brian McGee for the record.

3 I'll ask Jean-Pierre Labrie to answer.

4 **MR. LABRIE:** For the record, my name is
5 Jean-Pierre Labrie.

6 We are still in interactions with these
7 organizations. We still have INL doing some scoping
8 calculations for us, for example, so the activity is still
9 ongoing with these organizations.

10 **MEMBER BARNES:** And what proportion of that
11 information that's provided externally is accessible to
12 CNSC staff?

13 **MR. MCGEE:** Brian McGee for the record.

14 I'll ask Jean-Pierre Labrie to answer.

15 **MR. LABRIE:** For the record, my name is
16 Jean-Pierre Labrie.

17 We have provided to the CNSC staff all the
18 documents that we have received from these organizations
19 and the recommendations and our proposed disposition of
20 these recommendations in the test plan.

21 **MEMBER BARNES:** And to CNSC staff, an
22 encouragement that certainly commission, didn't AECL took
23 on its own direction to seek external advice in what
24 obviously is a very complex issue and -- and sort of
25 difficult issue to resolve.

1 To what extent has CNSC staff taken
2 external advice?

3 **MR. PEARSON:** Bruce Pearson for the record.

4 The only external advice that we've sought
5 on this issue of the positive PCR was quite some time ago;
6 back when the positive PCR issue was first raised. And we
7 did hire a consultant to do an independent look at -- at
8 the data in parallel with our -- our look at the data.

9 With regards to our -- our follow-up
10 actions and monitoring the progress that AECL is making
11 with their consultants, we do get the final reports. We
12 do attend progress meetings and there's been two separate
13 occasions that staff has actually traveled to Idaho
14 National Labs and to Brookhaven National Labs to
15 participate in meetings and discussions with consultants.

16 **MEMBER BARNES:** Given that we're now -- it
17 seems to me -- over the next several months, going to come
18 into a rather crucial time as the tests go into the 400-
19 Series, 500-Series and the licensee will be coming forward
20 for some final -- I think so-called final recommendations
21 for licensing approvals, do you have any comment whether,
22 in terms of the expertise you have currently in -- CNSC
23 staff it would be wise, beneficial or whatever, to secure
24 external advice to make sure that staff is fully able to
25 cover all aspects given the kind of uncertainties that

1 staff has just -- just indicated understanding the system,
2 not just having some -- some milestones met?

3 **MR. SANTINI:** Miguel Santini for the
4 record.

5 We haven't considered seeking external
6 advice on the review of the hypothetical case that the
7 AECL comes back to us requesting approval with a positive
8 PCR because this is still hypothetical, but we will
9 certainly consider, if that happens to have -- to seek
10 external advice on that.

11 We have done extensive research in terms of
12 how the PCR is considered by -- by other regulators in the
13 world. And in general, as in our case, the PCR is not
14 prescribed as to be negative for the sign and -- and be
15 acceptable. There are only two regulators in the world
16 that prescribe the PCR to be negative.

17 Now the -- the approach that we use is --
18 is risk informed, so we will not say that a positive PCR
19 is not acceptable at all until we finally see the safety
20 case and see how that supports operation with a positive
21 PCR.

22 Having said that, I would like to go back
23 to a previous answer regarding the -- the information
24 obtained from different sources of expertise around the
25 world by AECL.

1 We have reviewed their reports and in our
2 views, yes, in general AECL's methodology and approaches
3 have been confirmed by these experts. The problem is that
4 they all coincided and the models used are okay and
5 everything seems -- they -- they think they did everything
6 right but the issue is the models do not represent what is
7 happening in the core and that's the issue.

8 **MEMBER BARNES:** Just a couple of diagrams
9 -- questions to AECL on your organizational chart which we
10 asked you to provide, and I appreciate that.

11 This is on page 4 of your CMD.

12 The first is the location of the Manager,
13 the quality assurance which is towards the bottom right,
14 and Senior Quality Representative. And I wonder if it's
15 appropriate to ask whether in reporting to both the
16 Director, DIF, sort of some degree and also the Director
17 of MMIR, whether that -- given the situation that we're
18 in, whether that should report at a higher level?

19 **MR. MCGEE:** Brian McGee for the record.

20 Commissioner Barnes, are you referring to
21 the facility quality representative in your question?

22 **MEMBER BARNES:** No, the Manager of Quality
23 Assurance; the one to the right, Senior Quality
24 Representative.

25 **MR. MCGEE:** Brian McGee for the record,

1 then.

2 So your question is, should he report to
3 the Director of DIF operations?

4 **MEMBER BARNES:** Yes, or even -- or even
5 higher in the organization?

6 **MR. MCGEE:** Brian McGee for the record.

7 The -- we believe that the Manager of
8 Quality Assurance and the Senior Quality Representative is
9 -- is properly placed in the organization given the roles
10 and responsibilities and the accountabilities associated
11 with that role.

12 The individual has a relationship -- a
13 functional relationship with the corporate quality
14 assurance office, which gives it a strength and
15 relationship to -- for anything that they see that the
16 individual in the role sees that they believe should be
17 changed.

18 So the nature of the -- the role
19 relationship is the individual identifies something that
20 they believe needs to be changed, they work with the --
21 with the Director of the MMIR project with it. If they
22 don't get the adequate satisfaction, the nature of the
23 authorities with the role, give them the ability to go to
24 the Corporate Compliance Organization. So they do have an
25 outlet for -- for identifying give them the ability to go

1 to the corporate compliance organization so they do have
2 an outlet for identifying concerns, and it's to a senior
3 level person in the corporate compliance organization.

4 **MEMBER BARNES:** Does that happen?

5 **MR. McGEE:** Brian McGee for the record.

6 I don't -- I can -- Brian McGee for the
7 record.

8 I don't have a specific example but I've
9 been told it does, on occasion.

10 **MEMBER BARNES:** Staff, are you happy with
11 that positioning of essentially the QA?

12 **MR. HOWDEN:** Barclay Howden speaking.

13 I'm going to ask our Quality Management
14 Specialist, Paul Wong, to respond.

15 **MR. WONG:** For the record, my name is Paul
16 Wong; Quality Management Specialist.

17 We have asked AECL the same question as you
18 raised, many years ago, and we have engaged corporate QA
19 up to the chief quality officer on this question and we
20 have struggled with this arrangement ourselves.

21 But the resolution -- there were some
22 issues that they managed to -- they took some changes --
23 made some changes -- and the result is the arrangement
24 that Mr. McGee has just described and also presented in
25 the CMD.

1 Obviously, we do prefer, as you pointed
2 out, that a senior quality manager reports to a higher
3 level of management and it is indirectly in a way doing
4 so.

5 CNSC doesn't prescribe an explicit
6 acceptable organization structure. We focus on the
7 effectiveness of this organization and the primary focus
8 we concern ourselves on is whether these individuals, with
9 their assigned responsibilities, are able to discharge
10 these responsibilities and provide the necessary oversight
11 and also have the necessary authority and freedom from any
12 undue pressure.

13 As a result, what we have been doing, we
14 have monitored the setup and the way it has worked and we
15 have not been -- we haven't found any deficiency as a
16 result of this arrangement and we continue to monitor it
17 and we accept, currently, the situation, unless we find
18 some deficiencies.

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

20 Just while we are on that diagram, it may
21 just be a graphical issue but I notice in the boxes at the
22 bottom that the ones on the left, the five on the left are
23 all managers and the five on the right are all directors.
24 Is a particular reason for that titling?

25 **MR. MCGEE:** Brian McGee for the record.

1 I'll talk about the operation side of the
2 organization and then I'll turn it to Ron Cullen to talk
3 about the project side of the organization.

4 The organizational structure and the level
5 of the managers in the operation side of the Dedicated
6 Isotope Facilities is consistent with the organizational
7 pattern and level that we use across the Chalk River
8 laboratory site for positions of that nature.

9 I'll turn to Ron Cullen to answer on the
10 project side.

11 **MR. CULLEN:** Ron Cullen for the record.

12 The position of directors as shown under
13 the Projects Group are primarily titles that have derived
14 from when other projects that have been overseas where
15 titles were significant in executing in the projects. So
16 these have carried forward into the current organization
17 and we find them, in a sense, quite effective in executing
18 the physical work in the field.

19 **MEMBER BARNES:** That will be it for this
20 round, Madam Chair.

21 **THE CHAIRPERSON:** Mr. Graham.

22 **MEMBER GRAHAM:** Thank you.

23 I've just got a couple of questions, first
24 with regard to what my colleagues have been asking. Just
25 to get this clear in my mind, CNSC are still working

1 towards the fact that we would licence under a negative
2 PCR, I guess that's -- or a negative coefficient.
3 Positive is still hypothetical. I think those words were
4 used. But at the end of the day, AECL will probably be
5 back to operate MAPLE 1 at a positive PCR.

6 My first question would be is because of
7 that and because it requires design change and because it
8 requires a safety case would that trigger an EA under
9 CEAA?

10 **THE CHAIRPERSON:** Mr. Graham will have to
11 ask AECL for comment on your ---

12 **MEMBER GRAHAM:** Okay. Would you like to
13 comment -- at the end of the day, if you can -- I mean, I
14 have read here as a layperson, you know, 2.8 and then
15 you're down to different values. And looking at the
16 charts I know the best scenario is to develop what you've
17 always gone after but if you do have to, in timeframes and
18 budgets and so on, which we've all heard about these today
19 -- at the end of the day may you be back? Do you think
20 that it's possible that you may be back to operate the
21 MAPLE 1 with a positive PCR?

22 **MR. MCGEE:** Brian McGee for the record.

23 Our total focus, organizational focus at
24 this moment in time is to take the PCR negative. The test
25 regime and all the work that we're putting into the PCR

1 test plan, in executing those activities, and taking a
2 prudent and rigorous approach as we go through it, is all
3 focused around taking that PCR negative.

4 In the event that we were unsuccessful and,
5 as Mr. Santini described, we understand the phenomena well
6 enough to be able to construct a safety case; then I
7 cannot preclude the possibility that we would come back
8 with a safety case but it would have to be a sound safety
9 case that we are convinced of and that we're able to
10 convince others of, including the CNSC staff.

11 I can't preclude that that is a possibility
12 but it's not a part of our focus right at this time. Our
13 focus is to eliminate the PCR, to drive it negative, and
14 to, you know, revise the safety analysis, the safety case
15 associated with a negative PCR and come back for approval
16 at that time.

17 Does that answer the question?

18 **MEMBER GRAHAM:** Yes.

19 And my next question to you then is the
20 timeframe -- you're looking at that will probably take up
21 to a year to be able to work towards reaching the negative
22 PCR?

23 **MR. McGEE:** Brian McGee for the record.

24 Our PCR test plan shows us coming back to
25 the Commission for a public meeting, not a hearing or an

1 approval to operate but for a public meeting to describe
2 to you at that time at the completion of PCR testing what
3 we have found. We expect that to happen in Q-1 of 2008.
4 So it's much closer than a one-year time period.

5 We're now approaching Series 400 testing.
6 This is not -- I want to be clear about this. This is not
7 to come and seek approval to operate. It's to come to a
8 meeting and present to you what we have found as we have
9 completed the PCR test plan.

10 **THE CHAIRPERSON:** If I may, Mr. Graham, I
11 realize that this is a hypothetical and, you know, we are
12 discussing these issues.

13 The reason I think -- if I could just
14 comment on why the Commission wants to talk about this is
15 this is a licensing hearing and so it's meant to be more
16 exhaustive than any updates or one-day hearings or
17 meetings or whatever the Commission decides to do.

18 So it's extremely important, I think, for
19 us to have an adequate framework so that we can look at
20 these -- perhaps more delineate in specific decisions
21 under a framework of broad understanding about the
22 direction.

23 So it should not be looked at as the
24 Commission making any comments about what would be
25 acceptable or unacceptable or what the options are; it's

1 just merely understanding the diagrams that were put on
2 the table. It is not to be seen as anything other than
3 what we understand is the direction of this. It's just to
4 adequately frame it so that later on when we come back
5 with specific ideas, we understand which part of the tree
6 we are hanging this off. So I just am concerned we are
7 going over here a bit.

8 Mr. Graham?

9 **MEMBER GRAHAM:** Thank you. On that, does
10 CNSC staff care to respond?

11 **MR. HOWDEN:** Barclay Howden speaking.

12 Mr. Graham, from the process standpoint is
13 an application would come in, and we would look at it
14 whether it is a project under CEAA, and it would be yes;
15 then it would be what is the licensee requesting, it would
16 be likely an amendment of the license, which is a trigger
17 under CEAA. And then an EA has to be done.

18 Then you would look and say has an EA
19 previously been done that covers this thing? So we would
20 have to look at the existing EA that exists for this
21 facility to determine whether an EA would be required.
22 And it is either "yes" or "no" and then after that steps
23 are done, you would go back to licensing which would be in
24 front of the Commission.

25 **MEMBER GRAHAM:** Thank you.

1 On the licensing part and with regard to
2 your CMD in number 3, proposed licence length and you are
3 proposing the 47 months but you are also talking about two
4 hold points for Commission consideration and approval.

5 I believe those are in August of 2008 and
6 August of 2009; is that correct?

7 **MR. HOWDEN:** Barclay Howden speaking.

8 In the original CMD, that was what was
9 proposed based on the schedule known at that time.

10 Based on all the discussions today and the
11 supplemental information that those dates have been pushed
12 out and they are quite uncertain because they are
13 dependent on the resolution of the PCR issue.

14 What we have asked from the Commission is
15 that if the Commission issues the licence for 47 months,
16 delegation of authority for certain authorizations but
17 indicating that we recommend that if there is a request to
18 go into service, which was that lower right-hand box on
19 Figure 10, ---

20 **MRMBER GRAHAM:** Right.

21 **MR. HOWDEN:** --- for MAPLE 1, that that
22 would be -- our proposal was that the Commission would
23 take that particular decision.

24 When that may occur, we are hearing it
25 might be a year out from now, but really it depends on the

1 PCR resolution in terms of the path forward before that
2 could come back. So based on our knowledge at the time,
3 that was the intention, is that we would come back to the
4 Commission for MAPLE 1 and MAPLE 2 with those two dates.

5 Let's not worry about the dates. Let's say
6 there could be two hold points and, in the interim, staff
7 requested delegated authority and also staff proposed a
8 mid-term report, just to update you. I believe AECL has
9 proposed to come back, post-PCR to bring you up to date.

10 **MEMBER GRAHAM:** So as it stands right now,
11 there would be a meeting, AECL would come to a meeting on
12 status -- on where status is and we would also do a mid-
13 term. Is that more or less what the process would be
14 right now?

15 **MR. HOWDEN:** From information updates, that
16 is correct. From hearing standpoint, that is still
17 speculative as to how the PCR resolution goes.

18 **MEMBER GRAHAM:** So really, I guess, just to
19 get it clear in my mind and trying to follow the charts,
20 over a 47-month period, if schedules go as planned, how
21 many times would AECL be back before the Commission,
22 either in meeting or in reviews and hearings?

23 **MR. HOWDEN:** Barclay Howden speaking.

24 There would be two information sessions;
25 post-PCR, mid-term, and then potentially two hearings for

1 MAPLE 1 and MAPLE 2. So that could be four visits back to
2 the Commission within that 47-month term.

3 **THE CHAIRPERSON:** First of all, I would
4 like to point out that this is what is proposed not what
5 the Commission has decided and, if you agree Mr. Graham, I
6 think we should ask -- I was going to do it later anyway,
7 but ask AECL their view on this. This is what is proposed
8 by the staff, but we haven't heard anything from AECL yet
9 on this.

10 **MEMBER GRAHAM:** I agree with that. Go
11 ahead.

12 **MR. MCGEE:** Brian McGee for the record.

13 We agree with the proposal. We believe it
14 is important to come back and inform the Commission of the
15 results of the PCR testing in an information session. The
16 information session at mid-licence term is fairly typical
17 and we would expect to see that and we support coming to
18 the Commission in a hearing format for declaration of
19 MAPLE 1 in-service, as well as MAPLE 2.

20 **THE CHAIRPERSON:** Back to you, Mr. Graham.

21 **MEMBER GRAHAM:** That's all.

22 **THE CHAIRPERSON:** I just have a couple of
23 areas that I would like to look at.

24 First of all, I realize looking back at the
25 transcripts in Day One, we had the application to put the

1 licences together and I think everyone sort of went off
2 assuming that this was -- there was reasons for this.

3 Just for the record, I think it is
4 important for us to understand from AECL and from staff
5 why there is an advantage to putting the two licences
6 together. It doesn't have to be a long discussion, but I
7 think that we need this for the record. Why do you think
8 this should be done?

9 **MR. MCGEE:** Brian McGee for the record.
10 Just for my clarity, are we talking about
11 within the DIF Facility?

12 **THE CHAIRPERSON:** Yes.

13 **MR. MCGEE:** Brian McGee for the record.
14 We believe that having the DIF Facility
15 managed within -- the operating licence is a significant
16 part of our operating documentation and a significant part
17 of the operation of the facility. So for purposes of
18 clarity and consistency across the organization it is
19 being managed under the leadership of a Director of
20 Operations.

21 We believe that it's a sound approach to
22 take to have all the facilities, within the facility, if
23 you want, governed under one operating licence. And that
24 way it gives a consolidated and an integrated view of
25 performance as well, so that as we go through the

1 operational period, both ourselves, staff and the
2 Commission ultimately have an integrated and a
3 consolidated view of how the facilities are being
4 operated.

5 **THE CHAIRPERSON:** Staff?

6 **MR. SANTINI:** Miguel Santini, for the
7 record.

8 Yes, we share this view with AECL. We have
9 to consider that all of the facilities at the sites are
10 managed or are kind of conducted using the same site-wide
11 programs, and these site-wide programs should be complied
12 with by all of the activities at the site.

13 From the administration perspective of the
14 licence it is tremendously simpler to have everything
15 consolidated under a single document. And when amendments
16 are required, when the reviews of these program documents
17 are required and approved by the Commission, it is simpler
18 to go that way.

19 **THE CHAIRPERSON:** I would just like to
20 qualify though, Mr. Santini, we're -- in agreeing to the
21 length of a licence, the Commission is not binding the
22 Commission at that point in terms of that discussion.

23 What we are talking about just
24 understanding that this is in a more efficient way of
25 operating, without losing the effectiveness of the

1 regulatory oversight. Is that what I can write down?

2 **MR. SANTINI:** Absolutely and that's why we
3 recommended to the Commission to two separate hearings
4 additional, given the licence period for approval to
5 switch to in-service status.

6 **THE CHAIRPERSON:** I also think it is
7 interesting that we are seeing in other areas where we
8 have a hearing around a result rather than a time period.
9 I think that's one of the things we have looked at as
10 well.

11 I would just like to come back, if I may,
12 to a comment that was made by staff in terms of
13 understanding, back to the PCR, in terms of the phenomena.
14 We heard from the staff, Mr. Howden particularly, about
15 the issues of understanding -- and modelling and
16 understanding, how the phenomena are bound and the
17 contribution -- those kinds of issues -- the understanding
18 rather than necessarily the number.

19 Mr. McGee, I would like to hear from AECL,
20 your thoughts on the importance of that understanding to
21 your confidence in operating this facility safely under
22 whatever is the bottom-line number.

23 **MR. MCGEE:** Brian McGee for the record.

24 I will make a couple of comments and I will
25 turn it over to Albert Bell (sic) to expand on as he sees

1 fit.

2 The safety analysis is really part of the
3 design basis of the facility and managing that design
4 basis effectively and having a sound understanding of the
5 design basis is really a cornerstone of sound operations,
6 safe and reliable operations.

7 So, understanding the phenomena that make
8 up the safety analysis, that piece of your design basis,
9 are really critical from an operating perspective in terms
10 of defining the safe operating envelope and those
11 operational aspects that are critical -- understanding the
12 phenomena is a central part of having a sound safety
13 analysis.

14 I'll turn it over to Albert Bell (sic), if
15 he'd like to expand on that.

16 **MR. LEE:** Albert Lee for the record.

17 I agree with Mr. McGee's comments. Having
18 a sound understanding of the phenomena and the behaviour
19 is very important to supporting a robust and well
20 developed safety case. It also provides support to how
21 operations can proceed in day-to-day operation.

22 So among the efforts that we're undertaking
23 to resolve the PCR issue, we are investigating all the
24 phenomena and investigating the best means to understand
25 the cause of the phenomena and how to mathematically

1 represent the phenomena in the models.

2 **THE CHAIRPERSON:** Thank you very much.

3 I propose that we take a break. We will
4 take a one-hour break for lunch and we will be back then
5 at 12:18.

6 The Commission will decide if it wants
7 further questions on round two and then we will do the
8 intervenors after that. So we will move back here in one
9 hour.

10 Thank you.

11 --- Upon recessing at 12:19 p.m.

12 --- Upon resuming at 1:18 p.m.

13 **THE CHAIRPERSON:** If I could ask you to
14 take your seats, please?

15 I understand from my colleagues that we may
16 have a couple of more questions on round two and then
17 we'll be moving quite soon into the intervenors for today.

18 So we will start then with Dr. McDill.

19 **MEMBER MCDILL:** Thank you.

20 My question is general in nature and it's
21 directed at staff. If basically we have information one
22 year out and the licence is for 47 months, because AECL
23 has said decisions have to be based on results that will
24 come in.

25 Is a 47-month licence appropriate?

1 **MR. HOWDEN:** Barclay Howden for the record.

2 In terms of regulating this particular
3 facility, Dr. McDill, what we've done is, like we've done
4 with other facilities, we've done an assessment of all the
5 programs that are needed to operate it safely, as well as
6 an assessment of their implementation and we've provided
7 that information to you in the form of "meets
8 requirements" or "doesn't meet requirements".

9 We followed up on an ongoing basis, so in
10 terms of -- from an ongoing regulatory oversight and safe
11 operation, we're satisfied that over a 47-month period
12 that there's not an issue.

13 I guess from the perspective of issues that
14 are unresolved, hence should we be licensing more on a
15 phased basis which is what we used -- which what we do
16 often is that we go through construction, commissioning,
17 operations, et cetera.

18 And normally what we tried to do was tie
19 the licence in to those particular phases. And we did do
20 that with this reactor, but then we got to the point where
21 we ran into significant issues. The first issues were the
22 shutoff rods didn't drop and then once they got past that
23 issue then we got to the point of getting actually into
24 commissioning and this PCR issue raising its head.

25 So from our perspective we would normally,

1 I think, go along in a phased approach. But I think just
2 because this is on an established site and it is drawing
3 off the site-wide programs, we have a high level of
4 confidence that those programs can be maintained over the
5 period of 47 months.

6 Because of the uncertainties we've tried to
7 introduce the regulatory hold points to basically say,
8 okay, over the course of this licence period there's going
9 to be a number of regulatory decision points, some for
10 staff under delegated authority and some for the
11 Commission.

12 What we wanted to do with those is have
13 focussed hearings, very much on the particular issue at
14 hand as opposed to having a broad re-licensing hearing
15 where we revisit all the programs in a systematic way.

16 What we would do is report our compliance
17 results to assure you that those programs that are
18 underpinning operations are still in good shape but we
19 wanted to focus on the regulatory issue at hand.

20 So that's a long answer to say that we can
21 go both ways. We could propose, "Let's just have a one-
22 year licence and come back in a year", or we can go for
23 four years.

24 Because of the schedule issues it's
25 difficult to start putting temporal times on the licence.

1 So that's why we tried to bound it with the 47 months and
2 then put forward the activities that had to be
3 accomplished during the course of the licence period
4 without knowing the timing.

5 So from our perspective we also saw it as a
6 way that we could from a regulatory standpoint, manage the
7 licence in an efficient manner while maintaining our
8 effectiveness. Certainly, the 47 months allows us to roll
9 it into our baseline compliance activities with our site
10 office.

11 So the -- even though we've got these
12 project-related issues, the site office is still working
13 in the background on all the programs that support the
14 facility; doing rounds, looking at environmental
15 protection.

16 So from a planning perspective it does
17 promote some efficiency for us, to be able to just come
18 back to you on topic-specific issues.

19 **MEMBER McDILL:** Thank you. Maybe AECL
20 would like to comment as well.

21 **MR. MCGEE:** Brian McGee for the record.

22 A 47-month licence is appropriate in this
23 case. The controls available to CNSC staff and to the
24 Commission, ranging from routine monitoring discussions
25 that we have on a regular basis with staff, to more

1 elaborate oversight mechanisms to inspection and audit
2 tools available, as well as enforcement tools, provide a
3 robust framework for the licensing of the facility.

4 In addition to that, the -- our proposal to
5 come back at the end of the PCR testing gives the
6 Commission itself another opportunity to monitor
7 performance at that level through an information session.
8 The mid-term licence review is another opportunity that
9 provides the Commission with a firsthand look at how
10 performance is trending.

11 And then of course the actual approval
12 points, the hold points that has been described by CNSC
13 staff, where we will come back to the Commission in a full
14 hearing session; all provide robust mechanisms to support
15 a 47-month licence.

16 **MEMBER McDILL:** Thank you, Madam Chair.

17 **THE CHAIRPERSON:** Other questions; Mr.
18 Graham?

19 **MEMBER GRAHAM:** Yes, I just have two
20 questions. The first one is to CNSC staff. In 2.3 of
21 your CMD H-16.B, under the heading of "Environmental
22 Protection" regarding the DIF review that was done on July
23 23rd to the 25th, you go on to say that:

24 "The implementation process still
25 needs improvements, mainly in document

1 control and program management."

2 Is there anything that should be reported
3 to the Commission with regard to deficiencies in this
4 program or anything that was not of a routine --
5 improvements that were needed but of major improvements
6 over?

7 **MR. HOWDEN:** Barclay Howden speaking.

8 I think overall our view is that we didn't
9 have anything to report to you that would be significant.

10 But I'm going to ask Christian Carrier who
11 is the project officer who was involved in the inspection
12 to provide you, just a very brief overview of some of the
13 things that were found and whether -- and why we saw them
14 as just things that just needed improvement, just part of
15 normal program improvement.

16 Thank you.

17 **MR. CARRIER:** Christian Carrier for the
18 record, from the Chalk River Laboratories Compliance and
19 Licensing Division.

20 So we carried out an inspection in July.
21 It was a two day and a half inspection and we covered a
22 number of aspects in the environmental monitoring program
23 and the facilities.

24 So we reviewed document control,
25 calibration, maintenance of records, verification of the

1 airborne monitoring systems and effluent system in
2 general, including liquid.

3 Configuration management of the facility;
4 project management; monitoring laboratory -- it was
5 analysing the samples -- and the training program for the
6 people at the facilities on the environmental monitoring
7 program.

8 So generally speaking we had made a number
9 of observations that translated into a number of action
10 notices and recommendations.

11 We have four action notices and two
12 recommendations and we have one positive observation
13 regarding the training of staff at the facility, regarding
14 implementation of the program which we thought was
15 important to note.

16 So regarding the action notices, we have
17 observed that some of the documentation was out dated.
18 According to AECL's own procedure the documentation should
19 be updated and reviewed every year on a yearly basis and
20 some of the documentation dated as late as the year 2000.

21 I understand from the discussion with AECL
22 staff that the overall program at the Chalk River site is
23 under review and consideration was being made as to
24 incorporate some of this information within the site.

25 So part of that situation of outdated

1 information may relate to the fact that the facilities
2 have not really been -- have been operating but not very
3 heavily during those years. In addition, there are
4 considerations into changing the structure of that
5 documentation.

6 Another observation that was made was that
7 some of the equipment in the field that we are seeing was
8 -- had a calibration sticker suggesting that the
9 calibration was outdated. Again, some of this equipment
10 was not that critical for the effluent monitoring but they
11 were part of the configuration so AECL normally should
12 ensure that these pieces of equipment should be
13 calibrated.

14 Another observation that has been made is
15 some components in the field were found to have been
16 replaced with other components that didn't meet the
17 prescribed quality for the monitoring equipment. That is
18 expected from time to time.

19 However, we have seen that at least one
20 piece of equipment had been replaced and had been staying
21 in position for about six months. It doesn't mean the
22 facility was not being monitored at that stage. However,
23 the facility -- well, there is redundant capability to
24 monitor the facility in this case. However, it is an
25 observation we have to note in the inspection report. So

1 that was not a situation by which a facility would not
2 have been monitored properly.

3 And one last observation that was made is
4 in some cases we have observed that the documentation that
5 was describing the facility in the final Safety Analysis
6 Report and in other documents were not consistent in what
7 was observed in the field. So observations were made to
8 AECL to ensure that consistency between documentation and
9 what existed in the field would be consistent.

10 So I don't know if that answers your
11 question.

12 In terms of significance, if I were to
13 summarize, I do believe that the facilities were properly
14 monitored for the status of operation in those days. In
15 some cases some of the pieces of equipment were not
16 functional but in areas where actually no radioactive
17 material was present. So the observation was made to AECL
18 that our expectation was that -- well, our position was
19 that the facility was in operation and normally the
20 equipment should have been able to do the monitoring even
21 though there was no radioactive material present.

22 It is an observation. We don't feel that
23 it has a significant impact on the program. However, we
24 clarified our expectations to AECL on that.

25 We do believe also that the systems in

1 place currently gives us confidence at a time of more
2 operation of the facility, the equipment will be in place
3 to do proper monitoring of the facilities for effluent
4 monitoring.

5 So I hope that answers your question.

6 **MEMBER GRAHAM:** Yes, it does, and thank
7 you.

8 I guess my question would be to AECL. I
9 mean, even though it may not be of significance it still
10 indicates lack of control in some of these things. Would
11 you like to care to comment as to when you'll have those -
12 - at least those four action notices, action items
13 resolved and brought up to the expectation of CNSC?

14 **MR. MCGEE:** Brian McGee for the record.

15 I'll ask Don Taylor to describe the
16 timeline associated with the specifics of those action
17 notices.

18 The Environmental Management System at
19 Chalk River Laboratories is a site-wide program and an
20 area of demonstrated performance. It is ISO-14001
21 certified and has just now gone through this fiscal year a
22 subsequent recertification. So we now have two 14001
23 certifications under our belts from an experiential
24 perspective.

25 The other aspect of the environmental

1 program is that under the site licence that was obtained
2 mid -- last calendar year -- were required to migrate to
3 S-296 and we are well on the way to doing that. On a
4 site-wide basis we are driving the environmental program
5 to meet the S-296 requirements for the CNSC. So the
6 program is a demonstrated area of performance.

7 Central in both of those aspects is
8 continuous improvement. And so the continuous improvement
9 aspects that are identified as part of the CNSC inspection
10 are important as well as the ongoing improvements and on
11 an annual basis we have an improvement plan for each of
12 the facilities onsite to address improved performance in
13 the environmental management system.

14 I'll turn it over to Don to talk
15 specifically about the timeline.

16 **MR. TAYLOR:** For the record Don Taylor,
17 Director of DIF Operations.

18 I'm afraid I don't know the detailed
19 timelines for these four actions at this point in time but
20 we do have knowledge of the observations and we are
21 setting action plans to take care of them through our
22 processes. We will treat them very seriously as we do
23 with all of these.

24 **MEMBER GRAHAM:** Thank you.

25 I just have one other question and this is

1 for clarification, I guess; 2.4.3 regarding the MIPF
2 production.

3 MIPF is continuing. However, there is no
4 substantive progress to report from Hearing Day One. Does
5 that production -- is that subject to MAPLE 1 in full
6 production or can it be -- is the MIPF producing when you
7 are at stage 300 Series or 400 Series and so on, just for
8 clarification?

9 **MR. MCGEE:** Brian McGee for the record.
10 The MIPF is reliant on MAPLE 1 full
11 commercial operation, that's correct.

12 **THE CHAIRPERSON:** Any further questions?
13 Dr. Barnes.

14 **MEMBER BARNES:** This might be a
15 duplication, for which I apologize. I'll just go back to
16 staff because I'm struggling a little bit myself.

17 I can understand the logic for the various
18 licenses and to some extent the logic for a 47-month term,
19 but given the issues that we've been addressing here now
20 for quite some time and the difficulty of AECL being able
21 to achieve the appropriate resolution to the PCR problem
22 which affects MAPLE 1, MAPLE 2, it seems to me that on the
23 one hand there is a need to have some extended licence
24 length, but there certainly needs to be some review
25 points. On the one hand you're talking about certain hold

1 points from a milestone perspective. Second, in your
2 document, although it's sort of -- a little bit buried in
3 there -- it's not in the initial sort of final
4 recommendations -- you're talking about having a sort of a
5 mid-term review in, I think, about October or thereabouts
6 in 2009.

7 It would seem to me that it would be good
8 to have a review towards sort of active commissioning of
9 MAPLE 1 and, presumably, MAPLE 2 that might be twinned
10 depending on progress and then the NPF commissioning and
11 of course with the NIPF too.

12 So on the one hand we have a longer licence
13 term. We have the specific problem with PCR which makes
14 it difficult today to predict when there would be active
15 commissioning of MAPLE 1, 2 and the NPF but four years is
16 a long time for a licence when there has been this
17 important issue before us. So the nature of these
18 meetings, I think, is important to me and the timing of
19 them.

20 So could I just ask you -- sorry for the
21 repetition but from a staff viewpoint, how do you think it
22 is best to have the Commission look at these and
23 particularly in a public forum?

24 **MR. HOWDEN:** Thank you. Barclay Howden
25 speaking.

1 I think the way we structured things with
2 the mid-term and then the two hold points, we thought that
3 they would be staggered such that you would be getting
4 that information. With AECL proposing a post-PCR testing
5 update I think that's a good thing.

6 We would definitely take direction from the
7 Commission whether you wanted another update at the active
8 commissioning phase. I would suggest that if the timing -
9 - it all depends on how things pan out but the timing
10 might actually align with the mid-term so we could kill
11 those two at the same time. But if they were stretched
12 out, certainly if the Commission desired we would be more
13 than happy to provide an update to make sure that you're
14 well-apprised and that the public is well-apprised.

15 We're not against making those updates and
16 I think something around active commissioning could --
17 could be taken care of for sure, because 47 months, as you
18 say, is a long period for a facility that is undergoing
19 change, as opposed to one that's just steady with not very
20 many changes, so we certainly take that direction from the
21 Commission.

22 **MEMBER BARNES:** I particularly consider it
23 still to, I think, significant C-ratings in operating
24 performance and performance assurance, which seem to be
25 tied to some of the difficulties that AECL is having.

1 **MR. HOWDEN:** Barclay Howden speaking.

2 Yes, we acknowledge that and we also
3 acknowledge that AECL makes strong commitments to bring
4 those up to meet expectations and I think if they reach
5 those that would -- that would also -- rather than
6 reporting updates, which tend to be negative, to provide
7 some positive updates as well.

8 Thank you.

9 **THE CHAIRPERSON:** I will recall, for the
10 staff, that I had -- and I'm trying to recall which
11 licence it was, a recent licence at CRL -- mentioned that
12 what would be helpful because of the complexity of the
13 site, for a background document to be developed that would
14 offer this continuity as well, no matter what the
15 licence's like because it's a complex site, you know,
16 looking at pulling out the various aspects without having
17 to go back to a total relooking at things because one
18 should not assume that the Commission looks at this every
19 day.

20 I mean, it looks at it a very -- period of
21 time and in pulling that out in a way that would cite this
22 appropriately, I think, no matter what is the decision of
23 the Commission would be helpful and I think you'll recall
24 that I asked for that to be done.

25 Further questions at this time?

1 Okay, well thank you very much, we've
2 finished round one and now we're going to move to the
3 intervenor's part of the hearing today, Hearing Day Two.

4 Before I start, I would like to mention to
5 all the intervenors that we do appreciate you taking the
6 time to interest yourself in this particular licence and
7 we will be -- we will be -- we can assure you that we've
8 read your written submissions in -- in great detail and
9 that your written submissions will also be considered, as
10 well as your orals today and that we've allotted
11 approximately 10 minutes to each of the presentations and
12 look forward to your oral and written comments.

13 First I'd like to move to the first written
14 presentation by the Canadian Nuclear Workers' Council.
15 Mr. David Shier has been with us before. We do have
16 CMD 07-H16.2, 07 H16.2A.

17 And the floor is yours, sir.

18

19 **07-H16.2 / 07-H16.2A**

20 **Oral presentation by the**

21 **Canadian Nuclear**

22 **Workers' Council**

23

24 **MR. SHIER:** Thank you and good afternoon,
25 Madam Chairperson and Members of the Commission.

1 For the record, my name is David Shier; I'm
2 the President of the Canadian Nuclear Workers' Council.

3 With me today I have several leaders of the
4 unions that are members of our council from Chalk River
5 and I would like to take the time to introduce them.

6 To my right is Gord Tapp. Gord is one of
7 the leaders of the Chalk River Technicians and
8 Technologists Union.

9 Beside Gord is Tom Brunette. Tom is the
10 Union Leader for the Operators at the MAPLE site, as well
11 as the other facilities at the Chalk River site.

12 Behind me is Pam Pickering. Pam is the
13 Leader of the Allied Trades Council, which represents
14 eight unions on the site.

15 And beside Pam is Ken Philipose. Ken is
16 the representative of the union for the professional
17 engineers at -- and scientists at Chalk River.

18 We are here today in support of the AECL's
19 application for the renewal of the licence and you do have
20 our written submissions so we're going to be fairly brief
21 and just highlight a few points we'd like to expand on.

22 So our presentation will consist of a quick
23 overview of the labour relations, conventional health and
24 safety, radiological health and safety, community
25 perspective and our conclusions and recommendations. And

1 again, this is all from the view of the people in the
2 workplace, through the leaders of their union.

3 As we indicated, there is 11 bargaining
4 units onsite and there is approximately eight collective
5 agreements and it's fortunate at this time that all the
6 bargaining is being completed and most of the unions are
7 into collective agreements up until 2011, except for the
8 Power Worker Unit, which theirs is up to 2009.

9 The health and safety structure, as we're
10 very -- health and safety is a very paramount point of the
11 Nuclear Worker Council and we're encouraged to see the
12 improvements in the health and safety performance and we
13 assure you that the workers onsite are very well aware of
14 their safety rights.

15 In putting together this presentation, the
16 authors, we toured the actual facility and talked to the
17 workers and we can assure you that they are well aware of
18 their rights and feel safe in working in the facility.

19 The Joint Health and Safety Committee has
20 been very active and they are, as you'll see from our
21 written submission, they are undergoing a quantification,
22 which basically reducing their numbers to make the
23 committee more effective and we're optimistic that is
24 going to happen.

25 The dose reduction; we looked right across

1 the site and it has been reduced and again we believe that
2 is from the involvement of the -- of the workers and some
3 of the new processes that are in place.

4 The community perspective; as we always
5 indicate, it's the workers that reside in the communities
6 and they are involved with a lot of community functions so
7 they're continually in contact with members of the public
8 and they're naturally questioned about the site and
9 they're able to give their views, naturally.

10 As we say, if it wasn't safe there they
11 wouldn't be there or they would be making sure that the
12 issues were dealt with.

13 The Nuclear Worker Council; we coordinate
14 some efforts in the area at different times and I guess
15 one area is the Renfrew and District Labour Council, which
16 has a large number of unions in the area and there's
17 several of the unions at Chalk River which are members of
18 that council, which again provides the opportunity for the
19 workers to tell -- answer any questions and tell people
20 exactly what it's like at that particular location.

21 So in conclusion, we indicate that the
22 public can be assured any issue involving public safety
23 will be addressed by the onsite unions and we encourage
24 the Commission to renew the operating licence for the
25 site.

1 And in conclusion, I would like to -- and
2 naturally we are prepared to take any questions that you
3 may have at this time.

4 Thank you.

5 **THE CHAIRPERSON:** Thank you very much.

6 And although we've had individual members
7 before, we haven't had the organization together so that
8 was an interesting development for us as well.

9 Any questions from my colleagues?

10 Yes, Dr. Barnes.

11 **MEMBER BARNES:** There has been a
12 significant reshaping of AECL's management, individuals
13 and organizational charts; that's why we asked probably
14 for it for this Day Two meeting, but it's now been in
15 place for a little while so I would appreciate any
16 comments that the unions might want to make on whether
17 you've seen any significant -- I'll say -- improvement,
18 from the viewpoint of workers on -- onsite?

19 **MR. SHIER:** I'll give you a response from
20 my perspective and then I'll ask if any of the other
21 members would like to add anything.

22 But from what I get from being external to
23 the site and hearing from the -- the different unions that
24 they indicate to me there has been a big positive affect;
25 that a lot of the things are being brought forward now

1 that weren't before; health and safety is improving;
2 there's more of an open atmosphere.

3 And now, with that, I'll ask if anybody
4 else wants to make any comments to that effect.

5 **MR. PHILIPOSE:** For the record, my name is
6 Ken Philipose. I represent the Chalk River Professional
7 Employees Union.

8 Yes, there was -- there have been a lot of
9 changes in management and our site is growing; we have new
10 people and there are new challenges.

11 Like Dave said, just to the -- I mention
12 that many of these organizational changes are brought in -
13 - improvements in the way reporting structure and the way
14 things are being heard, so it's -- it's positive.

15 **THE CHAIRPERSON:** Any questions?

16 Mr. Graham?

17 One of the changes that has also happened
18 on the same time is that there is a CNSC site presence.

19 Mr. Shier is used to this because of his
20 involvement in the NPP site, so I just wondered if there
21 was any comments with regards to -- you don't get to
22 choose whether we have site staff, let me make that clear,
23 but any comments about having a site -- CNSC staff -- site
24 staff on the -- in Chalk River?

25 **MR. SHIER:** David Shier, for the record.

1 Yes, we just found out about that and --
2 well, we'll probably be having some discussions with the
3 unions there to have some dialogue with the -- the site
4 representative. We found that fairly positive, especially
5 around the generating stations. So we think also publicly
6 that it is a good move as well because it shows a regular
7 -- being onsite -- and I think that will help solve some
8 problems with the public.

9 But definitely from a worker perspective,
10 we will be pursuing that avenue of having some meetings
11 with them.

12 **THE CHAIRPERSON:** For those that aren't
13 aware, on the NPP sites what we have said to the
14 representatives is it's important for them to know that
15 that is another safety valve, I guess, if I can put it
16 that way that if there are issues that come up onsite that
17 the CNSC site staff are requested to interact with
18 employees if they feel that there is some safety issue
19 that you need to talk about.

20 Clearly, we don't want to get into the
21 union management issues. We very clearly do not get into
22 that, but we do want to know that that's an added safety
23 issue for the employees and also for the management under
24 Mr. Santini as well.

25 But that is what we do at the NPP sites, is

1 one of the beauties of having onsite staff.

2 Further questions?

3 Well, thank you very much. We do
4 appreciate it. We realize we are a little bit delayed,
5 but thank you very much for coming.

6 We are now going to move to the next
7 intervention, which is an oral presentation by the
8 Corporation of the Town of Deep River outlined in MCD 07-
9 H16.3. We are pleased to welcome Her Worship, the Mayor
10 of Deep River, to us today. Thank you very much, ma'am,
11 for coming. We will let you get seated here.

12 Thank you very much for coming. The floor
13 is yours.

14

15 **07-H16.3**

16 **Oral presentation by the**

17 **Corporation of the**

18 **Town of Deep River**

19

20 **MS. AIKENS:** Thank you very much. For the
21 record, my name is Ann Aikens, the Mayor of Deep River.

22 I would like to thank you for the
23 opportunity to appear before the Commission to express my
24 support for the 47-month renewal for the operating licence
25 for MAPLE and NPF.

1 As head of council, it is important for me
2 to make the time to personally hear the submissions by
3 AECL, by CNSC staff and to listen to the thoughtful and
4 probing questions asked by Commission Members because it
5 continues to assure me and my community that safety
6 continues to be the primary consideration for everyone
7 involved.

8 Deep River and Renfrew County are very
9 proud to be home to AECL and to Chalk River Laboratories.
10 The economic impact of AECL is very important to our
11 community.

12 AECL is the second largest employer in the
13 County of Renfrew. It employs more than 2,100 employees
14 who live in 25 small communities in the Ottawa Valley. I
15 think sometimes people believe it's just Deep River that
16 is impacted by the employment, but that's not the case.
17 More than half of the employees are spread between other
18 small municipalities in Renfrew County. As such, they
19 constitute four percent of our total labour force. Their
20 salaries contribute to the prosperity of the region and
21 the success of our businesses, large and small.
22 Therefore, they contribute to the health and safety and
23 well being of these communities. So it is a very
24 important contribution.

25 All that being said, it is important for us

1 to realize and important for us to make sure that that's
2 being done in a safe environment. We feel fortunate to be
3 living and being involved with a workforce and an employer
4 that has such a rigorous safety oversight. It makes it
5 very beneficial to our communities.

6 Besides the impact, I want to talk also
7 about some of the major accomplishments that I have seen
8 in the short time that I have been the head of council.
9 AECL's management continues to keep us very well informed.

10 I am particularly impressed with the
11 efforts that AECL has undertaken to create the
12 Environmental Stewardship Committee. I benefit greatly as
13 head of council from the opportunity to share the opinions
14 of the other stakeholders around the table, and this is a
15 new initiative for us. At some of those meetings, the
16 CNSC representative that you talked about previously with
17 labour unions is available, and I have shared discussions
18 with that person over lunch. It also gives me an
19 opportunity to hear from other stakeholders and to see
20 their perspective and to understand their concerns as we
21 move forward collectively to come up with positive
22 solutions.

23 None of this would have been possible
24 without the initiative of the new management at AECL, and
25 I would very much like to highlight how important that is

1 as we go forward, not just on this licence renewal but on
2 the other ones as well.

3 From a community point of view, there has
4 been a lot of discussion about the whole issue about the
5 47 months and whether or not that's too long or not too
6 long. But from a community point of view, it's very
7 important and very helpful to us, not just for me as the
8 head of Deep River's council and community but also for my
9 colleagues at Renfrew County Council to be able to see
10 these individual licences in context to the overall site
11 licence and to know that it is not just specifically one
12 item that is being dealt with. It is being dealt with in
13 the context of the health and safety and wellbeing of our
14 communities for all activities that go on in the
15 operations on the site.

16 Further to what has been said, both by
17 Commission staff and by AECL, I would support the fact
18 that we would encourage a 47-month licence renewal. The
19 intervening points that they have for public information,
20 I think, are also very important and we would be very
21 interested to see those results as they come forward in
22 their testing.

23 But again, consolidating all of those
24 licence initiatives is very important to the communities.
25 It helps us to understand it in context. It helps us to

1 see it in context going forward, rather than isolating one
2 particular operation on the site.

3 In closing, because most of this stuff is
4 in our brief as well and I know you have other things to
5 talk about today as well, we are very proud to be part and
6 to be the host of AECL's community. As a community
7 member, we chose to come to Deep River from Mississauga.
8 We chose to raise our families there over 25 years ago. I
9 have never once worried about the safety of my children as
10 a mother and as head of council, I don't ever worry about
11 the safety of my community because we are located close to
12 AECL. I think I have stated that in previous submissions
13 to this to the Commission -- but I wanted to make that
14 crystal clear.

15 There are many places and many industries
16 that you could live beside that have not anywhere close to
17 the oversight or the kinds of rigorous demands that AECL
18 has for providing a safe community. As such, I applaud
19 the efforts of the Commission. I applaud AECL and I
20 applaud Commission staff for making sure that we move
21 forward collectively to make sure that this is done in the
22 best interests of my community, of Renfrew County and of
23 Canada. And as we move forward, the things that we are
24 going to learn in the ways that we are going to process
25 isotopes in the future will probably benefit all of the

1 world in isotope production.

2 So I look forward to moving forward
3 collectively on this, and I thank you for the opportunity
4 to identify my community's support.

5 I would also, before I conclude, like to
6 bring greetings from the warden from the County of
7 Renfrew, Warden Janice Visneskie. They had hoped that
8 they would be able to participate by telephone conference
9 -- both her and Bob Sweet, who is the Mayor of Petawawa.
10 They are previously engaged in a conference that they were
11 registered for, and they asked me today if I would bring
12 their greetings and their support to the Commission's
13 attention in a personal way. Although you do have their
14 written submission, they were wishing that they could have
15 done this by telephone because they had a previous
16 commitment.

17 So again, thank you for your time and I
18 would be happy to answer any questions that you may have.

19 **THE CHAIRPERSON:** Thank you very much and
20 thank you for coming. Questions from my colleagues?

21 I would like to thank you very much and I
22 just want to say that spending time with you and listening
23 to your submission is very important to us. I mean,
24 obviously, the communities have played a major role for us
25 in looking at the programs of the industries that we

1 regulate.

2 And the acceptance, what I tend to call the
3 social licence, is incredibly important to the companies
4 and to us as well. So we would like to thank you very
5 much for taking this time to be with us and we certainly
6 have read the written submissions from your colleagues as
7 well.

8 Thank you very much.

9 I would like to now move to the next
10 submission, which is an oral submission by MDS Nordion,
11 CMD 07-H16.4. Mr. Graham Malkoske, Vice-President of
12 Strategic Technology at MDS Nordion, is with us again.
13 Oh, and the President of MDS Nordion, Mr. West.

14 We would like to thank you for being here
15 today, gentlemen, and the floor is yours, sir, when you
16 are ready.

17

18 **07-H16.4**

19 **Oral presentation by**

20 **MDS Nordion**

21

22 **MR. WEST:** Good afternoon, Madam Chair, and
23 the Commission.

24 I am, for the record, Steve West, President
25 of MDS Nordion.

1 We are pleased to be here today to appear
2 before the Commission to fully support the application by
3 AECL for the renewal of the operating licence for the
4 Dedicated Isotopes Facilities.

5 I am going to handover now to Mr. Grant
6 Malkoske who will be giving our presentation.

7 **MR. MALKOSKE:** For the record, my name is
8 Grant Malkoske, Vice-President, Strategic Technologies
9 with MDS Nordion.

10 So our intervention is clearly in support
11 of AECL's application for an operating licence for the
12 Dedicated Isotope Facilities, for the period of 47 months.

13 We think that the importance of these
14 dedicated, Isotope Facilities to the reliable supply of
15 nuclear medicine isotopes for the global healthcare
16 industry is really paramount and we feel a strong
17 obligation to be able to continue to supply these isotopes
18 for patient needs.

19 It's also -- our intervention is also a
20 recognition of the licensing activities of the Commission,
21 as well as AECL, to ensure both the safe commissioning and
22 the safe in-service operation of these Dedicated Isotope
23 Facilities. They will be the workhorses for the future
24 production of medical isotopes.

25 And so, as we take a look at the supply

1 chain today for medical isotopes coming from Canada --
2 certainly NRU and the Moly Processing Facility continue to
3 be the paramount producers of these medical isotopes
4 internationally.

5 Some 60 percent of the world's medical
6 isotopes come from Canada. Some 50 percent of the supply
7 into the United States comes from Canada. So on the one
8 hand it truly is a privilege, on the other hand it's a
9 serious obligation to be able to continue supplying these
10 needs for patients.

11 And as this slide shows, the expectation is
12 that MAPLE and the Dedicated Isotope Facilities will pick
13 up this obligation, hopefully in the near future.

14 The diagnosis of disease is something that
15 is being used around the world; today, the diagnosis of
16 disease using Moly 99 and Tech 99 is some 80 percent of
17 the medical isotope procedures. And so, monitoring
18 health, expediting treatment, as this slide shows, is
19 something that only comes from these medical isotopes and
20 there are relatively few of these suppliers around the
21 world.

22 This slide shows some of the applications;
23 you've seen this slide before. I think the point that I'd
24 emphasize here is that the secure, reliable supply of
25 medical isotopes is what we think, an imperative

1 obligation upon each and every one of us, as we make sure
2 that these patient needs are being met.

3 Some of the new, exciting opportunities as
4 we go forward in the future is, as we see science
5 advancing health care applications, the whole field of
6 molecular imaging where, based on nuclear technologies, we
7 can look at these imaging technologies to better able us
8 to diagnose the need for different drug tools for patient
9 care.

10 And molecular imaging is going to speed up
11 this drug discovery, bring on new applications that truly
12 are exciting. And one of the examples we have here, on
13 the bottom of the slide, is a radio labelling of
14 monoclonal antibodies with Iodine-131 which is produced
15 here for treatment of non-Hodgkin's Lymphoma that product
16 being called Bexar.

17 Also, there are new, targeted diagnostics
18 and therapies; some for brain cancer, treating
19 neuroblastoma as an example. And so, the bottom left
20 picture shows a pictograph here of a brain tumour being
21 treated. So often the tumour is resected and any residual
22 cancer cells are treated with Iodine-131 or Iodine-125,
23 which could be introduced into the cavity and make sure
24 all the cancer cells are destroyed.

25 And so these targeted radionucleic

1 therapies are really exciting opportunities for the
2 future.

3 This slide is one that has become a
4 hallmark of many of the things that we do.

5 To make sure that these essential criteria
6 for medical isotope supply continue to be adhered to, as
7 we deliver a product around the world. And so, the
8 continuous product supply, the regulatory requirements,
9 the product quality, the consistency of delivery, all
10 become very important for patients to be able to depend
11 upon this product for meeting their needs.

12 And of course, it is truly a just in time
13 application from the time of reactor extraction, by the
14 time that is delivered to Ottawa, processed, put on a
15 plane, delivered to Logan Airport in Boston, taken to a
16 radio-pharmaceutical facility, made into a technetium
17 generator, delivered to a clinic, provided to a patient --
18 as little as 41 hours.

19 Self-supply logistics certainly are
20 critical; cross-border commerce becomes a fundamental
21 point of importance for us.

22 You've see this slide -- the dependency on
23 Canada for medical isotopes and I alluded to some of the
24 numbers prior. There are about 60 countries that rely on
25 Canada for its supply of reactor isotopes.

1 NRU, today, continues to be the workhorse.
2 And it's been very dependable; we certainly have seen a
3 lot of investment by Atomic Energy of Canada to ensure
4 that NRU and the Moly processing facility continue to
5 operate consistently, reliably, within the safety envelope
6 that is prescribed and these isotopes are produced and
7 distributed coming out of the NRU system.

8 It's interesting to note the strategic
9 value that Canada, Nordion and AECL play to the industry.
10 It's important to have security of supply. Backup
11 arrangements are in place with other producers but
12 nonetheless, there are no other producers around the world
13 that collectively can fill the gap if Canada's supply
14 chain were to go down.

15 And interestingly, we had a situation just
16 in the last couple of years -- twice -- in the United
17 States where one of the generator manufacturers had to
18 shut down their production line, leaving only one other
19 manufacturer.

20 And all of the isotopes for the United
21 States, in that case, were supplied from Canada. So,
22 supply -- production and supply was ramped up at NRU,
23 production and supply ramped up at Nordion.

24 Other worldwide backup arrangements were
25 put in place and distribution was made to other countries

1 from those other suppliers and we think it's really a
2 testimony to a lot of dedicated effort by many people to
3 ensure that this was done consistently, reliably and
4 safely.

5 So, certainly we see here how NRU is
6 essential today and the expectation is that the Dedicated
7 Isotope Facilities will assume NRU's supply, performance
8 obligations.

9 These isotopes, the "big four" as we call
10 them -- Moly-99, Iodine-131, Xenon-133, Iodine-125, these
11 will be the essential products that will come out of this
12 Dedicated Isotope Facility and be distributed around the
13 world.

14 We are concerned, of course, about progress
15 in bringing the Dedicated Isotope Facility's project to
16 completion. We've listened very intently today to some of
17 the discussions that have gone on around the MAPLE
18 Reactors, the positive power coefficient of reactivity.

19 We're also interested in seeing the Iodine
20 Facility brought to in-service operation, as well as the
21 NPF and so there is a lot of work to be done. We know
22 that time is important but nonetheless, we expect that the
23 completion of these facilities will be done safely, will
24 be done effectively so that their ongoing in-service
25 operation is not compromised.

1 So then, in summary, we think that this
2 reliable isotope supply is an essential obligation that we
3 must continue to uphold, both at AECL and at Nordion.

4 The entire supply chain has to continue to
5 meet patient needs and the focus on this obligation, we
6 think being given in Canada by AECL and by Nordion
7 certainly is important and our customers and patients
8 around the world would agree with that.

9 So then in summary, we support AECL's
10 application. We're confident of their ability to ensure
11 the safety of the workers and the public, to implement an
12 effective quality management program for commissioning and
13 for operations; to ensure the ongoing safety and
14 reliability of their operations and also to ensure that
15 they continue to meet the regulatory and environmental
16 protection requirements.

17 We support the application they have made
18 to renew these licenses for the Dedicated Isotope
19 Facilities to October 31st, 2011.

20 Thank you, Madam Chair and Members of the
21 Commission.

22 **THE CHAIRPERSON:** Well, thank you both to
23 Mr. West and Mr. Malkoske for being with us today.

24 Are there any questions from Commission
25 Members?

1 Yes, Dr. Barnes.

2 **MEMBER BARNES:** Just in your last slide,
3 you mentioned the issue of quality management which I
4 raised. Your words are that you are confident in the
5 AECL's ability to implement an effective quality
6 management program for commissioning and operations.

7 Do you think that the existing Quality
8 Management Program is satisfactory or needs significant
9 improvement?

10 **MR. MALKOSKE:** I don't know if I can
11 comment that it needs significant improvement -- is it on?
12 Yeah.

13 I don't know if I could comment that it
14 needs significant improvement.

15 We've listened to some of the results from
16 the 2003 audit, some of the results that were discussed
17 today from the 2007 audit and without having the detailed
18 information available to us, it would seem that there is
19 some work to do, to make sure that the program -- the site
20 program, the AECL corporate programs continue to be
21 robust. Maybe even some adjustments to make sure that
22 they're effective but we're certainly not experts in that
23 area. We would leave that to both AECL and the auditors
24 to determine that.

25 **THE CHAIRPERSON:** But I think you would

1 admit that that is key to your certainty of supply and the
2 quality of supply is going to be the quality management
3 program that they have in place.

4 **MR. MALKOSKE:** Yes, I think as we have
5 listened to discussions that have gone on over the last
6 number of years, if we're going to have continuity of
7 supply, dependability of supply, that that is an important
8 factor to demonstrate to our customers that that can be
9 achieved and adhered to.

10 **THE CHAIRPERSON:** Further questions from my
11 colleagues?

12 Yes, all I can say is you probably very
13 succinctly put in your slides the real issue that is
14 before us, period, is the Commission has as you well know
15 because you're a licensee too; this safety -- the
16 overwhelming safety mandate. But the Commission doesn't
17 live in a bubble. It knows that there is clearly some key
18 issues that you have outlined very succinctly in your
19 slides to do with reliance on the NRU and it did go
20 through a very vigorous re-licensing and improvement
21 program. But inevitably, this gap analysis is of great
22 importance to you which you've outlined succinctly.

23 But from the Commission's point of view it
24 is very much an issue that we are aware of but won't, as
25 you again clearly pointed out, be the issue that drives

1 the Commission. So I think it's very important to have
2 this succinctly put on paper. So thank you very much.

3 So thank you very much for coming,
4 gentlemen.

5 We will now move to the written
6 submissions. We have a written submission from the Town
7 of Petawawa as outlined in CMD 07-H16 -- my apologies.
8 It's the afternoon, I guess.

9 We are moving now to the next submission
10 which is a written submission from the Fire Department of
11 the Corporation of the Town of Laurentian Hills, CMD 07-
12 H16.5.

13
14 **07-H16.5**

15 **Written submission from the**
16 **Fire Department of the**
17 **Corporation of the Town of**
18 **Laurentian Hills**

19
20 **THE CHAIRPERSON:** Are there any questions
21 or comments from Commission Members with regards to this
22 submission?

23 Thank you very much.

24 We will now move to the next submission
25 which is a written submission from the Renfrew County

1 Catholic District School Board, CMD 07-H16.6.

2

3 **07-H16.6**

4 **Written submission from the**

5 **Renfrew County Catholic**

6 **District School Board**

7

8 **THE CHAIRPERSON:** Are there any questions
9 or comments with regards to this submission?

10 Now, we'll move to the one that I discussed
11 which is CMD 07-H16.7.

12

13 **07-H16.7**

14 **Written submission from the**

15 **Town of Petawawa**

16

17 **THE CHAIRPERSON:** Are there any questions
18 or comments with regards to this submission?

19 You see, I could have kept going.

20 The next submission is a written submission
21 from the City of Pembroke, CMD 07-H16.8.

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23 **07-H16.8**

24 **Written submission from the**

25 **City of Pembroke**

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THE CHAIRPERSON: Are there any questions or comments with regards to this? No? Thank you very much.

Then we move to the next submission which is a written submission from Mr. J.A.G. Severin, CMD 07-H16.9.

07-H16.9

**Written submission from
J.A.G. Severin**

THE CHAIRPERSON: Are there any questions or comments with regards to this written submission?

Seeing none, I'll move to the next one which is a written submission from the Pembroke Regional Hospital, CMD 07-H16.10.

07-H16.10

**Written submission from the
Pembroke Regional Hospital**

THE CHAIRPERSON: Are there any questions or comments with regards to this written submission?

We will now move to the next submission

1 which is the written submission from Renfrew County
2 District School Board, CMD 07-H16.11.

3

4 **07-H16.11**

5 **Written submission from the**

6 **Renfrew County District**

7 **School Board**

8

9 **THE CHAIRPERSON:** Are there any questions
10 or comments?

11 The next submission is a written submission
12 from Deep River District United Way, CMD 07-H16.12.

13

14 **07-H16.12**

15 **Written submission from the**

16 **Deep River District United Way**

17

18 **THE CHAIRPERSON:** Are there any questions
19 or comments with regard to this written submission?

20 Moving to the next written submission, a
21 written submission from the County of Renfrew, CMD 07-
22 H16.13.

23

24 **07-H16.13**

25 **Written submission from the**

1 **County of Renfrew**

2 **THE CHAIRPERSON:** Are there any questions
3 or comments with regards to this submission?

4 The next one is the written submission from
5 the United Way/ Centraide of the Upper Ottawa Valley, CMD
6 07-H16.14.

7

8 **07-H16.14**

9 **Written submission from the**
10 **United Way / Centraide of the**
11 **Upper Ottawa Valley Inc.**

12 **THE CHAIRPERSON:** Any questions or comments
13 with regards to this submission?

14 That brings to the end the matters before
15 the Commission on this area. I suggest -- with respect to
16 this matter I propose that the Commission confer with
17 regards to the information that was considered today and
18 then determine if further information is needed or if the
19 Commission is ready to proceed with a decision, and we
20 will advise accordingly.

21 Thank you very much, ladies and gentlemen,
22 for joining us today.

23 The hearing on the application by SRB
24 Technologies will be starting at three o'clock.

25 Thank you very much.

1 --- Upon recessing at 2:12 p.m.