

**Canadian Nuclear  
Safety Commission**

**Commission canadienne de  
sûreté nucléaire**

**Public hearing**

**Audience publique**

SRB Technologies (Canada) Inc.:  
Application for the renewal of the  
Class IB Licence to operate its  
Nuclear Substance Processing  
Facility in Pembroke, Ontario

SRB Technologies (Canada) Inc. :  
Demande visant le renouvellement  
du permis de catégorie IB pour  
exploiter son installation de  
traitement de substances nucléaires  
à Pembroke (Ontario)

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

**Le 17 février 2010**

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

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

**Commission Members present**

**Commissaires présents**

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

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

**Secretary:**

Mr. Marc Leblanc

**Secrétaire**

M. Marc Leblanc

**Senior Counsel :**

Mr. Jacques Lavoie

**Conseiller principal:**

M. Jacques Lavoie

1       **SRB Technologies (Canada) Inc.:**  
2       **Application for the renewal of the**  
3       **Class 1B Licence to operate its**  
4       **Nuclear Substance Processing**  
5       **Facility in Pembroke, Ontario**

6  
7                   **M. LEBLANC:** So this is Day One of the  
8       public hearing. The Notice of Public Hearing 2010-H-02  
9       was published on December 16<sup>th</sup>, 2009. Submissions from  
10      SRBT and CNSC staff were due by January 18<sup>th</sup>, 2010.

11                   I note that supplementary information has  
12      been filed by both SRBT and CNSC staff since the first  
13      publication of the agenda.

14                   Commission Member Document 10-H5.A is  
15      confidential and will be discussed in closed session, if  
16      necessary, after the public portion of the hearing.

17                   A letter was filed by the Concerned  
18      Citizens of Renfrew County. It was distributed to the  
19      Commission Members and to SRBT and is available at the  
20      reception desk, under Commission Member Document CMD 10-  
21      H5.2.

22                   There will be no oral presentation on this  
23      submission at this time. The public will have an  
24      opportunity to present before the Commission on Day Two,  
25      which is scheduled for May 19<sup>th</sup> here in Ottawa.

1                   **THE CHAIRMAN:** Okay. So we would like to  
2 start the hearing by calling on the presentation from  
3 SRBT, as outlined in Commission Member Documents H5.1 and  
4 H5.1A, and I understand that Mr. Stephane Levesque will  
5 make the presentation.

6                   Mr. Levesque, the floor is yours.

7  
8                   **10-H5.1 / 10-H5.1A**

9                   **Oral presentation by**

10                  **SRB Technologies (Canada) Inc.**

11  
12                  **MR. STEPHANE LEVESQUE:** Thank you,  
13 President Binder and Members of the Commission.

14                  My name is Stephane Levesque. I am the  
15 President for SRB Technologies and I'll be making the  
16 presentation today in support of our application to renew  
17 our Nuclear Processing Facility operating licence for a  
18 period of five years.

19                  I am accompanied today by Ross Fitzpatrick,  
20 our General Manager, who will help me answer some  
21 questions.

22                  SRB Technologies currently employs 18  
23 people and is located in an industrial park on the  
24 outskirts of Pembroke. We lease 1,200 square feet of a  
25 building and the closest residence to our facilities is

1 approximately 250 metres away.

2 SRB is licensed by the CNSC to process  
3 tritium. We process tritium for the purpose of  
4 manufacturing gaseous tritium light sources. These light  
5 sources are glass capsules internally coated with  
6 luminescent powder and filled with tritium.

7 The interaction between the particles  
8 emitted by the tritium and the luminescent coating  
9 produces light on a continuous basis.

10 Our products ensure the safety and security  
11 of people all over the world. We are a supplier ---

12 **(AUDIO DIFFICULTIES/DIFFICULTÉS AUDIOVISUELLES)**

13 **MR. LEVESQUE:** Okay. We are a supplier of  
14 aircraft science for many aerospace manufacturers,  
15 including Bombardier.

16 **THE CHAIRMAN:** Could we stop for one minute  
17 and let's see if we can actually figure out what's going  
18 on.

19 **MR. LEVESQUE:** Okay.

20 **(SHORT PAUSE/COURTE PAUSE)**

21 **THE CHAIRMAN:** Okay. Let's go. Let's try  
22 it out.

23 **MR. LEVESQUE:** Okay. We are a supplier of  
24 aircraft signs for many aerospace manufacturers, including  
25 Bombardier. We manufacture many vital products used by

1 the Canadian and other NATO peacekeeping troops worldwide.

2 Other lighting technologies require wiring  
3 power of batteries but our lighting products do not use  
4 electricity, thereby reducing energy consumption and  
5 aiding the environment against global warming.

6 The purpose of our application is to  
7 request the same licence activities and conditions that we  
8 have in our current licence. We are not requesting any  
9 new methods or processes.

10 We propose to operate the same equipment  
11 with the same trained staff and we propose to operate to  
12 the same release limits and action levels that we have in  
13 our current licence.

14 We are requesting a renewal for a period of  
15 five years and we are requesting approval of proposed  
16 schedules for payment of cost recovery fee arrears  
17 adjustments and growing the decommissioning fund to its  
18 full value.

19 Significant improvements were made leading  
20 up to the issuance of the current licence and during the  
21 term of the current licence, including a number of  
22 programs and procedures were improved. We made a number  
23 of organizational improvements. We continue to observe a  
24 strong safety culture. We did not operate during any type  
25 of precipitation. We did not seek the operation of the

1       reclamation unit.

2                       We implemented many emission mitigation  
3 measures. We instituted a greatly enhanced public  
4 information program and also instituted an enhanced  
5 environmental monitoring program with sampling and  
6 analysis performed by an independent third party.

7                       Our workforce is stable, with the same  
8 structure and the same staff that was in place when the  
9 current licence was issued. The average experience of  
10 each employee is just over 12 years. We've also  
11 instituted a number of committees shortly before the  
12 current licence was issued and a total of 118 minuted  
13 meetings have taken place.

14                      In each of 2008 and 2009, 19 internal  
15 audits of various safety areas were performed. SRB is  
16 also registered to ISO 9001 and in both 2008 and 2009 our  
17 registrar also performed full audits of our operations. A  
18 number of improvements were promptly made as a result of  
19 these audit findings.

20                      Benchmarking routinely takes place to  
21 define areas of improvement, where staff look at process  
22 problems, corrective actions and benchmark against other  
23 areas in the organization. We also benchmark against a  
24 number of other CNSC licensees by continuously reviewing  
25 their programs, documents and hearing matters.

1 Benchmarking was also used to improve the effectiveness of  
2 our existing programs and procedures.

3 Self-assessment is routinely performed by  
4 our organizational managers to define areas of  
5 improvement. Self-assessments are performed by review of  
6 anything from trending of performance data to internal  
7 audits. Self-assessment results are used to assess the  
8 adequacy and effectiveness of the quality management  
9 system.

10 Again, the same programs and procedures  
11 that were in place when the current licence was issued are  
12 still in place. A number of programs and procedures were  
13 improved throughout the term of the licence and additional  
14 programs and procedures were introduced to further ensure  
15 the protection of the public, the workers and the  
16 environment. Those existing programs and procedures  
17 reduce the effect on the operations and the environment  
18 and the public; we propose to continue and to work to  
19 those procedures. I have noted some here.

20 Monitoring of our emissions and the  
21 environment takes place on a continuous basis. You can  
22 see Figure F, a piece of processing equipment where the  
23 emissions go through our stacks and are monitored on a  
24 continuous basis by a bubbler that's monitored once a week  
25 and through our tritium monitor on a continuous basis

1 where you can get instantaneous results on the chart  
2 recorder, and then through various elements in an  
3 environmental monitoring program, which I'll discuss  
4 further.

5 We've experienced a significant continuous  
6 reduction in emissions over the last few years where  
7 tritium processing is taking place. We surpassed our  
8 emission reduction target and reduced the average weekly  
9 emissions by four times what we had targeted for the first  
10 year of operations. Emissions in 2009 were only 22  
11 percent of what they were in 2006 and only 3 percent of  
12 what they were in 2005. Our mitigation committee will  
13 continue to work on identifying and implementing  
14 additional mitigation measures in the future.

15 If I can draw your attention to Figure G,  
16 we can see the emissions for the years where we processed  
17 tritium. We have 2005 and 2006 that were essentially full  
18 years of processing tritium. We don't have 2007 in the  
19 graph as we only processed for a few weeks. And in the  
20 third column is essentially the first 12 months of the  
21 existing licence and then the following six months almost  
22 to today. And you can see that the weekly emissions at  
23 the end of 2009 were 664 GBqs per week and are essentially  
24 3 percent of what they were in 2005.

25 The anticipated impact on the environment

1 from the existing operation continues to be reduced  
2 significantly from what it was in 2005.

3 Based on our targets, predicted decreasing  
4 concentrations in groundwater, the amount of tritium  
5 measured in the environment from the operation is expected  
6 to even be lower in the future. Concentrations on site in  
7 this operating mode provide an acceptable level of  
8 environmental protection and allow for the sustainable use  
9 of groundwater resources.

10 Our environmental monitoring program  
11 consists of monthly sampling of 40 passive air samplers or  
12 air monitoring stations. Concentrations again have  
13 dropped significantly since 2005.

14 A passive air sampler located approximately  
15 222 metres from the facility closest to the closest  
16 residence from SRB is used to calculate the dose to a  
17 member of the public while at home. We also have three  
18 passive air samplers that are located right near the  
19 facility, and the highest of those are used to calculate  
20 the dose to a member of the public while at work.

21 If I draw your attention to Figure H, you  
22 can see that again the concentrations have dropped at  
23 every station significantly since 2005. If you see that  
24 2008 is slightly lower than 2009 it's because we've only  
25 operated from the month of July onwards.

1                   Also, as part of our environmental  
2 monitoring program we also sample produce from at least  
3 six local gardens. The results are used to calculate the  
4 dose to a member of the public. Three local gardens  
5 located approximately 400 metres from the facility yield  
6 the highest concentrations. Results still show  
7 concentrations have significantly dropped since 2005.

8                   After the issuance of the current licence,  
9 we instituted detailed procedures for monitoring tritium  
10 concentrations in precipitation near the facility. We  
11 installed eight precipitation monitors near eight existing  
12 passive air samplers that are located approximately 250  
13 metres from the facility. Concentrations in  
14 precipitations are analyzed on a monthly basis by a third  
15 party and results average approximately 110 becquerels per  
16 litre.

17                   After the issuance of the current licence,  
18 again, we instituted detailed procedures for monitoring  
19 tritium concentrations in facility downspouts.  
20 Concentrations in downspouts have been measured  
21 periodically during precipitation events and the results  
22 in all downspouts average approximately 360 becquerels per  
23 litre.

24                   Our groundwater studies include monitoring  
25 data from 55 wells drilled at different depths. Thirty-

1 eight (38) of those wells are located within approximately  
2 150 metres of our stack. We continue to perform ongoing  
3 monitoring of 50 of those wells, including the wells that  
4 are used by neighbouring businesses and residences. All  
5 wells to be used for drinking water located near the  
6 facility have been identified.

7 If you look at Figure J and you look at the  
8 little white triangles, you can see all the monitoring  
9 wells that are monitored at the facility; would also note  
10 the business wells and residential wells by the red cross.  
11 We also have on the map, you can see, Muskrat River  
12 sampling points up and downstream from the facility.

13 Since November '06, we've been regularly  
14 monitoring all wells that are used for drinking water by  
15 residences and businesses that are located near the  
16 facility.

17 Average concentrations range from 4 to  
18 1,500 becquerels per litre, depending on their location  
19 from the facility. It's important to note that if an  
20 individual was to use water from a well at this highest  
21 concentration of 1,500 becquerels per litre as a sole  
22 source of drinking water for the entire year, their dose  
23 from consuming that water would be approximately two and a  
24 half percent of the public dose limit set by the CNSC.

25 A comprehensive groundwater report was

1 provided to CNSC and MOE staff in January '08. The report  
2 confirmed the observed tritium concentrations in  
3 groundwater fell within the ranges expected for air  
4 dispersion of emissions. The highest tritium  
5 concentration remains in the monitoring well located near  
6 the stack area on the SRB property.

7 Emissions under the current release limit  
8 and the cessation of operation during precipitation,  
9 together with natural decay, will eliminate tritium  
10 concentrations in groundwater in excess of the drinking  
11 water guideline within a few decades. The average idle  
12 groundwater velocity indicates that any changes that might  
13 occur in groundwater quality would take place relatively  
14 slowly. Changes in groundwater could readily be observed  
15 with the sampling frequency of the current monitoring  
16 program.

17 Over the proposed licence term of five  
18 years, SRB therefore proposes to continue to monitor  
19 concentrations in wells and to report those results to  
20 CNSC and MOE as part of the environmental monitoring  
21 program quarterly report.

22 The radiation dose to the public and to SRB  
23 staff as a result of operations has significantly reduced  
24 from where they were in 2005. Radiation doses are well  
25 below the regulatory limits for both the public and

1 workers. Doses to the public from the operation are also  
2 expected to be even lower in the future. We surpassed our  
3 occupational dose target by reducing the occupational dose  
4 by 17 percent, 2 percent more than the 15 percent  
5 reduction that we had targeted for the first year of  
6 operation.

7 Improvement in work practices implemented  
8 by our health physics team and human protection  
9 coordinator are expected to result in lower radiation  
10 doses to our staff in the future.

11 If I can draw your attention to Figure K,  
12 you can see that the maximum annual dose to a member of  
13 the public as a result of the emissions from SRB have  
14 significantly decreased since 2005 and is well below the  
15 regulatory limit of 1 millisievert, being much less than 1  
16 percent.

17 You can see in 2009 the dose to the public  
18 being 0.00569 millisieverts. And if you see that it's  
19 still a little bit higher in 2008 despite having operated  
20 half the year, it's because groundwater on average has  
21 dropped significantly from 2008 to 2009 and that  
22 represents approximately over 60 percent of the calculated  
23 does to a member of the public.

24 The maximum and average annual doses to SRB  
25 staff has also significantly decreased since 2005 and were

1 well below the regulatory limit of 50 millisieverts. I  
2 think if you look at 2009 for first full year back of  
3 operation, the maximum at 1.45, those are well below those  
4 of other licensees that process tritium.

5           Regarding non-radiological health and  
6 safety activities, we've been federally regulated since  
7 2008; previously the facility was provincially regulated.  
8 As a result of this change in jurisdiction, a hazard  
9 prevention program and a number of new procedure have been  
10 developed.

11           The health and safety committee has met 29  
12 times since being formed and findings of the committee are  
13 promptly addressed and closed. During 2008, there were  
14 two visits by HRSDC. Findings were promptly addressed and  
15 also closed. In 2008 and 2009 many staff members have  
16 taken various training courses in health and safety.

17           We've also introduced a number of fire  
18 protection initiatives, including the institution of a  
19 fire protection committee which has met 10 times resulting  
20 in various measures which have improved fire safety. A  
21 new revision of the fire protection program has been  
22 developed to reflect many improvements that have been made  
23 at the facility over the last two years.

24           The Pembroke Fire Department inspected the  
25 facility in May 2009 with no violations.

1                   A fire protection consultant has also  
2 performed inspection of the facilities in 2008 and 2009.  
3 Recommendations were made and addressed. Fire  
4 extinguisher training was performed for all staff in  
5 September '08 and again in September '09 by the Pembroke  
6 Fire Department. In 2009, fire responders received  
7 training by SRB on how to respond to a fire at the  
8 facility.

9                   Now, regarding our enhanced public  
10 information program, we recognize that SRB needed to make  
11 great efforts to gain the confidence and trust of the  
12 public and our local interest groups. We've adopted new  
13 company governing principles with emphasis on achieving  
14 public acceptance. We constituted a public information  
15 program committee which has met 11 times, resulting in  
16 various public information initiatives.

17                   We have provided members of the public  
18 plant tours. We sample wells and gardens belonging to the  
19 public and provide a report of the results with rationale  
20 and explanation in layman's terms.

21                   On a yearly basis, we make a presentation  
22 to members of Pembroke City Council in support of our  
23 annual compliance report. The presentation is televised  
24 and open to the public.

25                   We also continue to regularly provide city

1 officials and local Members of Parliament information on  
2 issues regarding SRB. We sent a press release to the  
3 media announcing our application for a licence, which  
4 resulted in one positive article being published in the  
5 print and online versions of the Pembroke Daily Observer  
6 and in a letter from a member of the Concerned Citizens of  
7 Renfrew County.

8 Since the issuance of the current licence,  
9 we've only received five inquiries from members of the  
10 public who have historically expressed concerns regarding  
11 the facility. Three inquiries were received from one  
12 individual and two from another. These individuals  
13 requested monitoring results which were promptly provided  
14 and are since posted on our website.

15 We've sent to those that expressed concerns  
16 as part of our licence hearings for our current licence a  
17 copy of our press release announcing our application and a  
18 postage-paid envelope for providing their comments. Today  
19 we received comments from two members of the public. We  
20 responded to both and we've obviously received from the  
21 CNSC the letter from the Concerned Citizens on Friday and  
22 we also intend on responding to that letter.

23 SRB is also formalizing a public disclosure  
24 protocol that will describe the information and the medium  
25 of disclosure in regards to information on the facility.

1           We use our website to provide the log-in  
2 information to the public and it's regularly updated to  
3 provide up-to-date information to the facility. If I draw  
4 your attention to Figure M, you can see that there is a  
5 tab on community involvement regarding various things that  
6 we do in the community like promoting the United Way.

7           We have a tab on annual compliance reports  
8 and other reports and monitoring results. That would  
9 include full copies of our annual compliance report  
10 downloadable in PDF format, historical and current of our  
11 quarterly environmental monitoring reports, or any other  
12 reports that are submitted to the CNSC that may be of  
13 interest to the public.

14           We have a section on public notifications  
15 where we've informed the public of our licence  
16 application. We would inform them of any amendment or any  
17 exceedence(sic) of action levels.

18           We also have three tabs that include local  
19 interest group meetings, presentations and public tours  
20 that are given, and those City Council presentations as  
21 discussed earlier. Hard copies are downloadable on our  
22 website.

23           We also have a pamphlet and brochure that  
24 provide information to the public on our facility and the  
25 effects from our facility on the public. We also have

1 links to third-party websites, including to the CNSC, that  
2 provide information on tritium, and we clearly provide  
3 contact information for the public.

4 In March '06, SRB created a decommissioning  
5 fund and in October '07 the Commission accepted the  
6 financial guarantee provided for the safe state of  
7 closure. The acceptance of the safe state of closure for  
8 the facility is an initial risk reduction measure that  
9 further ensures the safety of the public, the workers and  
10 the environment.

11 A total of just over \$159,000 is currently  
12 in the fund, with a payment of 45,000 which is expected to  
13 be made in April 2010, bringing the fund to a total value  
14 of just over \$204,000 before the current licence expires.  
15 As part of the hearing for the current licence, the  
16 Commission approved a schedule of payments to grow this  
17 decommissioning fund to its full value by April 2014. As  
18 part of the licence being applied for, SRB therefore  
19 requests that the Commission continue to approve this same  
20 schedule.

21 Also as part of the hearing for the current  
22 licence, the Commission approved the proposal for payment  
23 of the cost recovery fee adjustments to clear the cost  
24 recovery fee adjustment arrears by September 2013.

25 As part of the licence currently being

1 applied for, SRB therefore requests that the Commission  
2 continue to accept this proposal for payment of the cost  
3 recovery fee adjustment and issue a licence to SRB by  
4 granting an exemption under Section 7 of the *Nuclear*  
5 *Safety and Control Act* from the requirement at section  
6 24.2(c). We continue to believe that the conditions for  
7 granting an exemption under Section 11 of the General  
8 Nuclear Safety and Control Regulations are met.

9 There are a number of benefits that we  
10 would gain by getting a five-year licence term. A five-  
11 year licence would provide SRB time to assess the changes  
12 in groundwater conditions and witness the predicted  
13 decrease in tritium concentration in a number of wells,  
14 correlating with the decrease in emissions since 2005 and  
15 2006.

16 In these harsh economic times, the  
17 stability of a five-year licence would also further ensure  
18 SRB's existence, continue monitoring the ground water, and  
19 further reduction of emissions. As part of our public  
20 information program, we'll ensure that the public  
21 continues to be informed and has the opportunity to make  
22 comments and that those comments are addressed.

23 We are also open to making periodic updates  
24 to the Commission on various aspects of the operations as  
25 necessary.

1           In conclusion, throughout the term of the  
2           current licence we have operated the facility safely and  
3           in accordance with the provisions of the licence, the  
4           *Nuclear Safety Control Act* and regulations.

5           We demonstrated our commitment and  
6           integrity by the work described in our submissions. We  
7           demonstrated that we will continue to make improvements in  
8           the future by the various initiatives, goals and targets  
9           described in these submissions and based our input and  
10          concerns raised by CNSC staff, members of the public and  
11          employees.

12          In addition, SRB is committed to perform a  
13          yearly review of the effectiveness of each program and to  
14          use results from these reviews to make improvements.

15          SRB has demonstrated that it has met all  
16          the conditions and reporting requirements of the current  
17          licence. We are also agreeable to the new licence format  
18          and licence condition handbook that is being presented to  
19          you, and the staff will discuss, but we do believe that  
20          the public needs to be informed of any changes that are  
21          made to these documents and propose to add a new link on  
22          our website that will provide copies of these documents  
23          and highlight any changes that may be proposed or made.

24          We therefore believe that under section  
25          24.4 of the *Nuclear Safety and Control Act*, SRB is

1 qualified to carry on the activity for which it has  
2 applied and will, in carrying that activity, make adequate  
3 provisions for the protection of the environment, to the  
4 health and safety of persons and the maintenance of  
5 national security, and measures required to implement  
6 international obligations to which Canada has agreed.

7 For these reasons, we respectfully request  
8 that the Commission renew our licence for a period of five  
9 years.

10 Thank you.

11 **THE CHAIRMAN:** Thank you very much.

12 Prior to opening the floor for questioning,  
13 I would like to move to a presentation from CNSC as  
14 outlined in CMD H5 and H5.B. I understand, Mr. Elder, you  
15 will make the presentation. The floor is yours.

16  
17 **10-H5 / 10-H5.B**

18 **Oral presentation by**

19 **CNSC Staff**  
20

21 **MR. ELDER:** Thank you. Good morning  
22 Mr. President and members of the Commission. My name is  
23 Peter Elder, I'm the Director General of the Directorate  
24 of Nuclear Cycle and Facilities Regulation.

25 With me at the front table are Mr. B. R.

1 Ravishankar, Director of the Processing and Research  
2 Facilities Division, and Ms. Ann Erdman, the Project  
3 Officer for this facility.

4 Behind me I have a number of staff members  
5 who are involved in preparation of this document and will  
6 be available to answer questions on various technical  
7 details.

8 As SRB has already stated, they have  
9 applied to renew their operating licence to process  
10 tritium for the purpose of manufacturing gases, tritium  
11 light sources and also to produce these light sources in  
12 radiation devices.

13 CNSC staff assessment of the licence  
14 application is documented in CMDs 10-H5 and 10-H5.A. As  
15 is already noted by the Secretary, 10-H5.A contains the  
16 details on security and is a confidential document but the  
17 assessment of the security forms part of our overall  
18 recommendation on the facility.

19 These CMDs represent the first use of a new  
20 standard format that the CNSC plans to use for all major  
21 facilities. To provide the level of consistency, there is  
22 a standard list of 14 safety and control areas that are  
23 rated. These are then grouped into three broader  
24 functional areas of management, facility and equipment and  
25 core control processes.

1                   Since CMD 10-H5 was issued we have made a  
2                   minor change in the title of one core control process to  
3                   better reflect the scope of the area. So Emergency  
4                   Management and Response has been renamed to Emergency  
5                   Management and Fire Protection. This change is reflected  
6                   in the proposed licence in CMD 10-H5.B and it doesn't  
7                   reflect the recommendations or the ratings in the other  
8                   CMDs.

9                   CNSC staff has concluded that SRBT has  
10                  operated the facility safely during this licence period  
11                  and has made several improvements that will add to its  
12                  operational safety. Therefore, staff CMD includes a  
13                  recommendation the Commission approve the issuance of a  
14                  Nuclear Substance Processing Facility Operating Licence  
15                  that would authorize SRBT to operate the facility for a  
16                  period of five years.

17                  In addition, as I mentioned, CMD 10-H5.B  
18                  includes the proposed licence and a draft of the licence  
19                  condition handbook which will further enhance CNSC's  
20                  ability to verify the enforcement and compliance in an  
21                  effective manner. We'll provide a little more detail on  
22                  these items in the next part of the presentation. The  
23                  first part will be given by Mr. Ravishankar.

24                  **MR. RAVISHANKAR:** Good morning, Mr.  
25                  President and Commission members.

1           The CNSC staff's presentation will provide  
2           you with the recent history of SRBT's licensing  
3           activities, a brief description of the facility and the  
4           details of their licence application. We will then  
5           discuss staff's assessment of various safety and control  
6           areas and SRBT's performance in the current licensing  
7           period.

8           CNSC staff has established an approach to  
9           identify the appropriate levels of regulatory monitoring  
10          and control with respect to SRBT based on the significance  
11          of each safety and control area. Our presentation further  
12          discusses the five safety and control areas -- namely  
13          management system, operating performance, fitness for  
14          service, radiation protection and environmental protection  
15          -- that are considered to be of significance for SRBT.

16          Other relevant information for this licence  
17          application, such as cost recovery and the financial  
18          guarantee, will be discussed. We will end our  
19          presentation with our conclusions and recommendations to  
20          the Commission.

21          As an introduction, I would like to give a  
22          few details about the recent history of SRBT. In 2006  
23          tritium groundwater contamination was identified in the  
24          vicinity of SRBT and was linked to the operations of the  
25          SRBT facility. As a consequence, in 2007 the Commission

1 issued SRBT with a position licence and shut down the  
2 processing of any tritium. The Commission had decided to  
3 not renew the operating licence, based on the opinion that  
4 SRBT would not make adequate provision for the protection  
5 of the environment while carrying out their activities.

6 After making numerous improvements to the  
7 facility, SRBT again applied for an operating licence.  
8 After a two-day hearing in 2008 the Commission issued a  
9 two-year operating licence to SRBT.

10 SRBT leases a location in an industrial  
11 building, that is similar to a strip mall, in Pembroke.  
12 The facility occupies 1,100 square metres of floor space.  
13 The closest residence is located 255 metres from the  
14 facility. SRBT employs 18 persons at this time. The only  
15 nuclear substance that SRBT is authorized to process is  
16 tritium, which they receive as tritium gas. There are no  
17 hazardous chemicals used in the processing operation.

18 SRBT has applied for a five-year operating  
19 licence. The licence application was received by CNSC  
20 staff and was found to be complete. SRBT also requested  
21 in the application that they continue to pay the cost  
22 recovery fee arrear payments and fund the financial  
23 guarantee as found on the current licence.

24 Ms. Ann Erdman will now continue with the  
25 rest of the presentation, starting with the safety and

1 control areas.

2 **MS. ERDMAN:** Good morning, Mr. President  
3 and members of the Commission.

4 The next two slides present a summary of  
5 CNSC's staff assessment of SRBT's performance in the  
6 safety and control areas.

7 As Mr. Elder commented, one of the safety  
8 areas has changed. Now Emergency Preparedness that's  
9 found on the second slide is now called Emergency  
10 Management and Fire Protection.

11 CNSC staff has assessed SRBT's performance  
12 in 13 of the 14 safety and control areas. The information  
13 as mentioned pertaining to security is protected and  
14 available in CMD 10-H5.A. In the past CMD format, CNSC  
15 staff identified and discussed only five safety areas.  
16 The new standardized CMD format used for this relicensing  
17 hearing considers the 14 safety and control areas and also  
18 incorporates the elements from the previous safety areas.

19 It's just the information was there; we're  
20 just using the new terminology and your CMD has a graph in  
21 it that explains that.

22 CNSC staff has assessed the performance in  
23 all areas and finds them satisfactory. CNSC staff has  
24 also trended some of the safety and control areas where  
25 possible and some of the new safety and control areas have

1 not been trended previous -- they are new and they haven't  
2 been addressed previously as stand-alone areas, so trends  
3 are not possible to make at this time.

4 We continue to see improvements in the  
5 operation of the facility during this licence period.  
6 Also note that one of the safety and control areas called  
7 Human Performance Management actually concerns the  
8 training program for SRB.

9 I will briefly give some additional  
10 information in the five safety and control areas that CNSC  
11 staff consider as most important in terms of risk ranking.

12 Management system. CNSC staff concludes  
13 that SRBT has made significant positive changes to the  
14 overall management system during this licensing period.  
15 During a recent inspection at the facility, CNSC staff  
16 observed SRBT's progress in performing internal audits,  
17 annual self-assessments and contractor management. SRBT's  
18 improvement in this area is positive and has resulted in  
19 the improvement of their safety programs.

20 Operating performance. CNSC staff  
21 concludes that SRBT has made continuous improvement in  
22 this area, trending upwards. Operation has been in  
23 compliance with the stricter release limits imposed in the  
24 2008 licence. In addition, CNSC staff's opinion is that  
25 SRBT has a much improved safety culture.

1                   Fitness for service. In the case of SRBT,  
2                   this area focuses on maintenance. SRBT continues to  
3                   maintain the facility in order to ensure that the  
4                   equipment required for safe operation is available. The  
5                   maintenance program, in association with the quality  
6                   program and radiation safety program, includes the  
7                   appropriate testing and inspection of the safety systems  
8                   and components.

9                   Radiation Protection. SRBT continues to  
10                  perform satisfactorily in the area of radiation  
11                  protection. The radiation dose to the workers remains  
12                  well below the regulatory limit. The highest dose  
13                  recorded in 2009 was 1.45 millisieverts, which is about 50  
14                  percent less than the same dose statistic in 2005, the  
15                  last year in which they operated a full 12 months.

16                 Environmental Protection. Tritium releases  
17                 from SRBT have been well below licence limits. SRBT has  
18                 made significant improvements in reducing their tritium  
19                 emissions, releasing less than one-seventh of the tritium  
20                 released in 2006. This table outlines the releases from  
21                 2005 to 2009 and also shows this reduction in tritium  
22                 releases.

23                 CNSC staff conducted two inspections  
24                 related to environmental protection during this licensing  
25                 period at SRBT and found that they were operating in

1 compliance with their licence.

2 SRBT continues to collect environmental  
3 samples and uses the data to calculate the radiation dose  
4 to the public. The radiation dose to the public is very  
5 small, less than 1/100<sup>ths</sup> of the public dose limit. The  
6 public continues to be protected.

7 SRBT continues to monitor the groundwater.  
8 The groundwater near the facility continues to be a legacy  
9 issue. The monitoring data shows that the groundwater is  
10 in a recovery mode. Groundwater monitoring shows a  
11 decreasing trend consistent with lower emissions from the  
12 facility.

13 This slide shows an overview of the  
14 groundwater monitoring wells with the highest levels of  
15 tritium around the facility.

16 The trend of the one well near the base of  
17 the stack shows an increasing trend. CNSC staff believes  
18 that the increase in the trend in this well is an  
19 indication of the movement of an existing tritium plume.  
20 The well results, since October 2009, have not increased  
21 further and CNSC staff will continue to monitor this  
22 trend.

23 SRBT currently still owes \$237,068 for  
24 their fee arrears. They have paid \$135,000 in accordance  
25 with the schedule that is currently found on the current

1 licence and they have requested in the application to  
2 continue to pay the same schedule.

3 CNSC staff concludes that the schedule as  
4 outlined is reasonable based on financial information CNSC  
5 staff has received from SRBT. SRBT continues to pay all  
6 the current fees as required by the cost recovery fees  
7 regulations.

8 The preliminary decommissioning plan was  
9 accepted in 2006 and is to be reviewed in 2011. The  
10 Commission has accepted the financial guarantee and the  
11 current licence has a schedule of payments that SRBT has  
12 continued to pay this licensing period. The financial  
13 guarantee is currently estimated at \$550,476 and the  
14 amount in the escrow account is currently approximately  
15 \$159,000.

16 CNSC staff concludes that SRBT has operated  
17 the facility safely during this licensing period. The  
18 performance is acceptable and their programs have  
19 functioned as designed. SRBT has made additional  
20 improvements during this licensing period that will  
21 continue to enhance safety. SRBT should continue to  
22 operate the facility safely into the future.

23 I will now pass this presentation back to  
24 Mr. Elder. Thank you.

25 **MR. ELDER:** Thank you, Ms. Erdman.

1                   In reaching the conclusion just given, CNSC  
2 staff gave considerable weight to the improvements in the  
3 operation and programs at SRBT that has been observed  
4 since 2006. The performance, especially since the last  
5 licence renewal, has shown that the programs have been  
6 effective.

7                   To ensure that SRBT continues to improve,  
8 CNSC staff is proposing that SRBT licence follow the  
9 licence reform approach that started with the Bruce  
10 Nuclear Power Generation Stations last year. This  
11 approach improves regulatory clarity, consistency and  
12 predictability while maintaining appropriate regulatory  
13 oversight by the CNSC.

14                   To do this, broad requirements are placed  
15 in the licence and there is a company licence condition  
16 handbook or LCH. The LCH contains information on what  
17 CNSC staff looks for in measuring compliance with the  
18 licence condition, as well as recording and controlling  
19 key documents produced by the licensee related to a  
20 licence condition.

21                   For example, the proposed licence requires  
22 SRBT to have an environmental protection program. SRBT's  
23 current program meets CNSC staff's expectations for such a  
24 program and so it is controlled in the LCH as part of what  
25 CNSC staff will monitor compliance against.

1           In contrast to the current licence, the  
2 proposed licence further requires SRBT to continually  
3 maintain the programs to look for areas of improvement.

4           Another key change in the licence is that  
5 it follows the same standardized safety and control areas  
6 as the CMD. While this approach is not requiring SRBT to  
7 introduce new programs or procedures, it is ensuring that  
8 SRBT continually monitors performance in all areas  
9 throughout the licence period.

10           This is the first licence for a smaller  
11 Class I facility to use this approach and the LCH will  
12 evolve over the licence period. The LCH is a living  
13 document that CNSC staff will use in routine compliance  
14 activities and must reflect up-to-date information.

15           Since we are recommending that SRBT  
16 provides an annual update to the Commission on various  
17 elements of its operation, specifically on environmental  
18 monitoring, CNSC staff is prepared to summarize the  
19 changes to the LCH at the time of those updates.

20           Therefore, CNSC staff recommends the  
21 Commission issue the proposed licence for a period of five  
22 years, and note that the CNSC staff will be maintaining  
23 the associated licence condition handbook.

24           Thank you. CNSC staff is now available for  
25 any further questions.

1                   **THE CHAIRMAN:** Thank you.

2                   We will now move on to the question period  
3 from Commissioners and I would like to start with Mr.  
4 Graham.

5                   **MEMBER GRAHAM:** Thank you, Mr. Chair.

6                   My first question is to SRBT, and that is  
7 in your presentation this morning and we had it in your  
8 presentation that your employment level is at 18, we look  
9 back to 2005 and I think you had 47 and in 2006 when you  
10 had 38. Is it your intention during this licensing period  
11 to increase your employment levels or are you -- do you  
12 have more equipment and need less employees or what is  
13 your plan as far as employment levels?

14                   **MR. LEVESQUE:** Thank you. Stephane  
15 Levesque, for the record.

16                   We would expect that over a period of five  
17 years we may hire as much as five employees at the most  
18 over that period of time.

19                   **MEMBER GRAHAM:** Are you producing less  
20 volume of lights and so on now than what you were, say, in  
21 2006? Is that why your employment is less, or do you have  
22 just more equipment to do things more efficiently?

23                   **MR. LEVESQUE:** Thank you for the question.  
24 Stephane Levesque, for the record.

25                   There are a number of answers to the

1 question. First, the employees that we kept that remain  
2 employed with the facility are those that had most  
3 experience at the facility that had been employed for a  
4 lot longer years and their productivity is a lot higher  
5 per individual than having the 30-odd people in the past.

6 We do have some equipment that makes  
7 processing faster, but we also have reduced the level of  
8 production (a) due to the economy and to -- I think I  
9 stated in the written submission that we have an agreement  
10 with one of our competitors to purchase some of the light  
11 sources from them which helps also reduce our emissions in  
12 production.

13 **MEMBER GRAHAM:** Okay, so during the  
14 licensing period, the next five years of the proposed  
15 licensing period, you have 18 employees and you're talking  
16 about possibly increasing another five. Out of the 18,  
17 how many of those you'll be losing through retirement?  
18 And my question is going to be around the ones you are  
19 going to lose through retirement and the new five, the  
20 training program that you will put in place to ensure that  
21 the same safety standards will be in place that are in  
22 place now.

23 **MR. LEVESQUE:** Thank you. Stephane  
24 Levesque for the record.

25 I think we are in a good position. Despite

1 the experience of our staff, being an average of 12 years,  
2 I think the age average of our staff ranges between 41 and  
3 42 years old. And with the age of our oldest staff member  
4 we don't expect to actually have any retirements over the  
5 next five years.

6                   Stephane Levesque for the record.

7 Unfortunately, due to the, again, slumping economy, we  
8 have a number -- a pool of former employees that still  
9 remain unemployed that we keep contact with regularly. We  
10 would expect that if we were to hire gradually another  
11 five employees, that we would pick from that pool of  
12 people, if they were available, and we would perform the  
13 same rigorous resumption of operation training that we  
14 observe with the existing staff. It would be to do a  
15 mentoring and coaching step by step of processing  
16 equipment to reading our procedures and it would be over a  
17 long period of time before an employee would be qualified  
18 to operate any processing equipment.

19                   But another thing we would intend to do is  
20 we think it would be likely that any individuals that we  
21 add may be in areas where tritium is not processed. So  
22 when we talk about hiring another five employees, maybe  
23 only one of those employees would be actually dedicated to  
24 processing tritium.

25                   **MEMBER GRAHAM:** Thank you.

1                   Just a couple of other questions, Mr.  
2 Chair, in this round.

3                   You noted in your slide, in one of your  
4 slides, that you indicated that you have not been  
5 processing during the rainy season or precipitation. That  
6 was not, I don't think, a licence condition. That was  
7 something that you people had chosen yourselves. Will you  
8 continue to maintain that rule in this licensing period?

9                   **MR. LEVESQUE:** Thank you for the question.  
10 Stephane Levesque for the record.

11                   Yes, we have the monitoring equipment to  
12 detect any precipitation. We have found that it reduces  
13 the concentrations in the soil water on site, based on our  
14 past experience. So yes, we propose to continue to  
15 operate during the term of a five-year licence with this  
16 procedure in place; it's not to operate in periods of  
17 precipitation.

18                   **MEMBER GRAHAM:** CNSC staff, do you care to  
19 comment or you're just in agreement with this -- it's not  
20 a condition, I don't think.

21                   **MR. ELDER:** It wasn't put on as a  
22 condition, but one of the things that when we go to this  
23 new approach with the licence condition handbook, that  
24 procedure is actually controlled within the handbook, so  
25 we will at least know if they wanted to change it and we'd

1 have a chance to assess if there were any impact from it.

2 So it forms what we call as part of the  
3 licensing basis for the facility. Their application says  
4 they are going to operate this way. The handbook will  
5 reflect that that's how they're going to operate, so we  
6 would be able to -- when you get down to it, when you look  
7 in a facility, you have to measure -- initially, you  
8 measure compliance against their own procedures. And  
9 that's where we would note and then we assess the impact  
10 of any deviation from a safety perspective.

11 **THE CHAIRMAN:** Can I, for clarification,  
12 but we also have another principle, which we always  
13 promote, the ALARA principle. So that's obviously a  
14 principle that will apply here because it's almost easiest  
15 to apply this kind of procedure to reduce the emission.  
16 Why wouldn't we be a little more explicit in our  
17 expectation on this?

18 **MR. ELDER:** I am going to ask Steve Mihok  
19 to give an answer. I mean obviously from ALARA but how  
20 our approach is on a specific -- from this participation  
21 in the range -- I'll ask Steve Mihok to give you some more  
22 detail.

23 **MR. MIHOK:** Steve Mihok, for the record.

24 I think you are sort of asking me a  
25 question on whether something is necessary as opposed to

1       being prudent or nice to have. By not operating when  
2       precipitation is falling, there is a benefit. Our models  
3       of washout of rain and snow and so on, how tritium  
4       behaves, tell us that there will be a benefit but it's  
5       very difficult to quantify.

6                 And so there may be a benefit of let's say  
7       a factor of two perhaps in this mode of operation near the  
8       facility. There may be relatively minor differences far  
9       from the facility where people live. So essentially, by  
10      doing this, the proposal is being prudent for protecting  
11      groundwater and soil water very close to the facility.  
12      It's not necessary; it's a good practice essentially.  
13      There is no compelling reason perhaps to do it. It  
14      doesn't actually necessarily give you, let's say, a  
15      benefit that you can measure.

16                Perhaps after several years, we will know  
17      how much of an improvement has occurred and at the moment  
18      the monitoring information is telling us that we are with  
19      abundant conservatism in terms of this mode of operation  
20      and in terms of our original objectives.

21                **THE CHAIRMAN:** Listening to you just  
22      reinforces my view that a factor of two, to me, sounds  
23      pretty good. Even if I can't measure it, if we believe  
24      logically that it would make sense, and using ALARA, our  
25      precautionary principle, all the good stuff, I think we

1 can be a little bit more -- particularly if the operators  
2 agree to follow that, I think we should be a little bit  
3 more explicit about doing it that way as part of the  
4 operational processes.

5 Mr. Graham?

6 **MEMBER GRAHAM:** Thank you, Mr. Chair.  
7 You've really echoed what my line of questioning was going  
8 to be.

9 I'll go to just one other question I have,  
10 and that is there has been a repayment schedule on two  
11 fronts: one on cost recovery, bringing the account up to  
12 date, and the other on a decommissioning fund. We learned  
13 this morning the decommissioning fund is at 159,000 and by  
14 April, it will be 204 out of 550 and it will be at 100  
15 percent, I believe, by 2014. I believe that's kind of the  
16 way it's been explained.

17 My only question would be, and that would  
18 be to CNSC staff, will there be in the next five years a  
19 re-examination of decommissioning fund to see that it is  
20 adequate at the 550,000? And if that is the case, will  
21 that change the licence condition or the condition that  
22 will be put on, on repayment?

23 So my first question to CNSC staff is do  
24 you anticipate, in the next five years, a review of the  
25 PDP or the decommissioning fund?

1                   **MR. ELDER:** The answer would be yes, and  
2 we've put that what we've -- for all the licences, we want  
3 a five-year review of both the decommissioning plan and  
4 the associated financial guarantee. For SRBT, that would  
5 be in 2011.

6                   **MEMBER GRAHAM:** Okay.

7                   **MR. ELDER:** And so that the licence says  
8 every five years but in the CMD we said that five-year  
9 period would be in 2011. Then we would revisit the  
10 payment schedule at that time.

11                   We've also said, while the payment schedule  
12 -- we've moved it from the licence into the handbook.  
13 We've also left the control of that payment schedule at  
14 the Commission level only, so any changes -- that's the  
15 schedule, so when there's a new financial guarantee we  
16 will have to bring it back to the Commission for you to  
17 approve that guarantee and then approve any associated  
18 changes to the payment schedule.

19                   **MEMBER GRAHAM:** So what you're saying is  
20 you're asking the Commission to approve the 550 fund to be  
21 met by 2014 until otherwise you come back?

22                   **MR. ELDER:** Until otherwise we come back  
23 and it's very explicit in the licence, saying that that  
24 must be reviewed every five years. The five-year period  
25 would be in 2011.

1                   So we fully expect that we will be back to  
2 you with a revised financial guarantee and potentially a  
3 change to the payment schedule next year.

4                   **MEMBER GRAHAM:** So if the Commission  
5 approved the licence, the five-year licence, with an  
6 annual reporting, that would probably come at the same  
7 time, would it, as the annual reporting?

8                   **MR. ELDER:** It would depend on the timing.  
9 It would be efficient to bring it at the same time but, as  
10 you have seen on some of the other ones, we will bring you  
11 the revised guarantee when we've reviewed it and are  
12 satisfied that it's appropriate.

13                   **MEMBER GRAHAM:** Thank you.

14                   **THE CHAIRMAN:** Thank you. Monsieur Harvey.

15                   **MEMBER HARVEY:** Merci, Monsieur Président.

16                   Certainly we do appreciate the fact that  
17 the results are a lot better than it was it in the past  
18 and that the emissions have been reduced, the doses, et  
19 cetera. What part of those reductions are related to the  
20 fact that you abandoned the recycling activities, the  
21 reparation of old devices, and what part is due to the new  
22 management of SRBT?

23                   **MR. LEVESQUE:** Stephane Levesque, for the  
24 record.

25                   If I draw your attention to page 17 of 44

1 of the written submission, there is a table, Table 2, that  
2 basically discusses tritium released versus tritium  
3 processed as a ratio. Obviously eliminating the  
4 reclamation operation has had an effect on that. I can't  
5 quantify exactly what effect it had but we can quantify  
6 what reductions are attributable to our production and you  
7 can see there right in those tables essentially what it  
8 is.

9 Why the reclamation is hard to pinpoint  
10 exactly. Depending on the type of light sources that you  
11 would reclaim at the age, the size of it, you would get  
12 different levels of emission. So it's a complicated  
13 answer that unfortunately I can't pinpoint exactly for  
14 you. So it is a contribution but I don't think it's a  
15 sole contribution, nor do I think it even equates for half  
16 of the emission reductions that we had.

17 I think that some of the initiatives that  
18 included the reduction of heating cycles on our uranium  
19 beds and the reduction of volume or release have probably  
20 had the majority of our reduction in emissions; more than  
21 50 percent of them anyway.

22 **MEMBER HARVEY:** Does the staff agree with  
23 that?

24 **MR. ELDER:** We would agree that there have  
25 been a number of steps outside not doing the reclamation

1 that have reduced the emissions, so the ratio would be  
2 very hard to calculate precisely. But yes, in general it  
3 is not only the reclamation part, it's roughly what we  
4 would agree -- it's roughly what Mr. Levesque said.

5 **MEMBER HARVEY:** Okay, Thank you.

6 **THE CHAIRMAN:** Again, please forgive my  
7 ignorance here. Can you tell me what did you do for  
8 reclamation? Is that trying to retrieve the tritium from  
9 all signs, et cetera? And if yes, tell me what you do  
10 nowadays. What do you do now with old equipment? What  
11 did Walmart do with all their exit signs -- you know the  
12 big story in the States that nobody could find those exit  
13 signs? What do people do now to dispose of this material?

14 **MR. LEVESQUE:** Stephane Levesque, for the  
15 record.

16 I'll answer your questions just by adding a  
17 little comment from Mr. Harvey, is that if you look at the  
18 emissions for 2006 and last year and a half, the later  
19 part of 2006, the last 20-odd weeks have very little  
20 reclamation performed. And obviously since we've had the  
21 new licence we've had no reclamation at all, so those  
22 reductions are directly attributable to what we did in  
23 processing.

24 Regarding Mr. Binder, your questions  
25 regarding the Walmart contract, I'm not aware of what



1 packaging program, which we look at at their facility. So  
2 when SRBT is packaging and transporting these signs they  
3 must follow -- they must comply with the Canadian  
4 regulations, both our regulations, Packaging and Transport  
5 of Nuclear Substances, as well as the Transport Canada  
6 regulations.

7 During inspections we look at their program  
8 to ensure that they are complying so as long as they're  
9 complying with those regulations there should be  
10 protection in terms of packaging and transport.

11 **THE CHAIRMAN:** May I suggest that, you  
12 know, for day two -- unless I missed it, I didn't find a  
13 lot of material in the CMDs about disposing of this  
14 material and I know we've got some input that what you do  
15 with this stuff is of concern and importance.

16 So there may not be any safety issue but I  
17 think it would be useful for day two to at least have  
18 clarity as to what happened to this material once it kind  
19 of expired -- for the public record at least. Thank you.

20 Monsieur Harvey.

21 **MEMBER HARVEY:** Pursuing that point, would  
22 it be possible to get just a comparison with what volume  
23 you normally received before 2006 and you proceed in your  
24 reclamation process, in comparison with the volume that  
25 now you receive and you are obliged to derive to some --

1 just to compare. I mean your customers now; you said,  
2 "They are sending back to us a certain quantity of  
3 material." So just compare what you received before 2006  
4 and now.

5 **MR. LEVESQUE:** Stephane Levesque, for the  
6 record.

7 I'm thinking as you're asking. It would be  
8 an actually extremely difficult exercise to be able to  
9 complete because we had a number of years ago two sister  
10 companies that would also transfer product for recycling  
11 to us, as well as product from their stockroom that was  
12 still useful and would be returned in the same form or  
13 fashion.

14 It would be hard to be able to trace back a  
15 number of years ago exactly what happened with the  
16 product. What I could do is basically give data on what  
17 product is being returned now. That I could provide but  
18 in order to be able to look in the past five or 10 years  
19 ago as to where the product came from, I know, but for  
20 what purpose it was -- whether it was for recycling or  
21 whether it was put back in our stock, it would be hard to  
22 be able to look at the records and determine that  
23 information now.

24 **MEMBER HARVEY:** Yes, but you certainly know  
25 the volumes you were processing at that time and then the

1 last year the process has been operating.

2 **MR. LEVESQUE:** Stephane Levesque, for the  
3 record.

4 One of the complicated things is that we  
5 know what we processed but some of the product that we  
6 received isn't some that we made. It could be made by our  
7 competitor or by our sister companies, that were made like  
8 20, 30 years ago. It's just really hard to give a ratio  
9 exactly of what was made to what's being returned, which I  
10 think is what you're looking for.

11 **MEMBER HARVEY:** Okay.

12 Another question is in page 5 of 44. It's  
13 about the organization chart. In the paragraph just  
14 before the chart you say:

15 "Each position is held by a single individual who  
16 possesses the qualifications and experience requirements  
17 of the position."

18 And then, well, you've got 19 boxes there,  
19 so it is correct to say that each box is each  
20 responsibility assumed by one person? I presume you've  
21 got many technicians.

22 **MR. LEVESQUE:** Stephane Levesque, for the  
23 record.

24 You made the same observation we did after  
25 we made a review of our presentation. If you look at the

1 production technicians, we may not actually have any  
2 production technicians under that area where the actual  
3 supervisor performs all the work within the work area  
4 where there's actually no technician; meaning why the  
5 boxes may be more than the amount of employees that we  
6 have.

7 What I was trying to show is that in a  
8 number of companies that I've seen in hearings, if you  
9 look at the boxes you have individuals that perform the  
10 quality manager duties as well as environmental protection  
11 duties as well as human protection coordinator duties, and  
12 we've done a good job I think in the last two years of  
13 basically identifying these roles specific to one  
14 individual because they're so important. so I wanted to  
15 highlight that those are performed by one individual. But  
16 if you look at the lower boxes, the production  
17 technicians, those may not actually exist.

18 **MEMBER HARVEY:** Okay. So when I refer to  
19 page 11 of 44, then you've got the procedure matrix. So  
20 how do we link that with the organizational chart?

21 There's a lot of boxes here and is there  
22 one person taking care of each box or there is -- how does  
23 it work? Can you just elaborate on that point and say who  
24 is responsible? You've got the quality assurance, fire  
25 protection, the public information program. Is there many

1 of those tasks that are assumed by one employee?

2 **MR. LEVESQUE:** Good question. Stephane  
3 Levesque, for the record.

4 So if I look at Figure 7, the document  
5 matrix, essentially all of the 18 employees that we have  
6 on staff have specific job descriptions, and within those  
7 descriptions it would state which individual was  
8 responsible for which program. In certain cases it may be  
9 a combination of people and I'll give you an example.

10 If I go from the top one there, you see the  
11 hazard prevention program. That is a program that  
12 basically gets developed by the occupational health and  
13 safety committee and there's a number of individuals that  
14 can maybe as a group - are responsible for that program.

15 The maintenance program, the general  
16 manager is responsible for. The facility security  
17 program, the president is responsible for. The  
18 environmental monitoring program, the environment  
19 protection coordinator is responsible for.

20 The fire protection program, the general  
21 manager is responsible for with input from the fire  
22 protection committee. The public information program, I'm  
23 responsible for with the human protection coordinator --  
24 sorry, the environment protection coordinator.

25 So each of these boxes and number of

1 procedures have people that are dedicated to them, that  
2 are responsible for them.

3 **MEMBER HARVEY:** My concern was just because  
4 you have 18 employees and so many tasks to do and you've  
5 got to produce something at the same time.

6 I'm concerned about the time you have to do  
7 all those tasks and I would like the staff to comment on  
8 that. You think the -- what is presented here is, well,  
9 easy to -- because you seem to find it okay and  
10 satisfactory.

11 So would you comment on that and how so few  
12 employees, 18 employees, can realize all those tasks?

13 **MR. ELDER:** I think what we were looking at  
14 -- sorry, this structure on the document matrix is what  
15 you would not necessarily expect to see in everything, but  
16 it's typical of what you see in a management system; is  
17 that there are defined activities there.

18 They really -- you know, if it's done  
19 properly they don't change that often, so that while you  
20 can constantly look at them there's not a lot of  
21 maintenance on them, but it is that there's a logic. So  
22 that when you have procedures, it looks at things from  
23 various aspects and it's integrated so that your one  
24 procedure will touch on maintenance and fire protection  
25 and radiation protection within that procedure being

1 driven down from the programs.

2 So the structure is appropriate structure  
3 if it's -- once you set it up, there isn't necessarily a  
4 lot of maintenance to those documents.

5 **MEMBER HARVEY:** Another way to ask the  
6 question to Mr. Levesque is how many efforts -- or what is  
7 the importance of the efforts given to that compared to  
8 the production?

9 **MR. LEVESQUE:** Stephane Levesque, for the  
10 record. I'll answer your question, but I'd just like to  
11 add something to answer your question from earlier.

12 I understood your question to be, who is  
13 responsible for what and is everybody responsible for  
14 certain tasks and programs, and they are. But I draw your  
15 attention to the last licence hearings.

16 We had performed, at the direction of the  
17 Commission, an organizational study that basically looked  
18 at the management capacity and the ability of the existing  
19 staff and we had a few less staff at the time to be able  
20 to perform the tasks that we were performing, which  
21 included an analysis of time and seeing if everyone had  
22 time to perform the tasks, and that concluded that as the  
23 structure was built -- which it still is today; that's why  
24 I keep harping on it's the same structure as it was before  
25 that study was done, exactly, to answer your question to

1       prove that we had everything in place and we could handle  
2       it, including our production duties, essentially.

3                   The importance that's put to all the  
4       production compared to what it is to programs, it goes  
5       hand-in-hand. I think that that's what we've done the  
6       last two or three years, is we made our programs work for  
7       us while we're doing production. I think in the  
8       organizational study and the supplemental that we put  
9       after that CNSC staff has reviewed and approved, I think  
10      it demonstrated that we were able to perform our  
11      production duties and to efficiently manage our programs  
12      and procedures as they were.

13                   I think the list looks long, but a lot of  
14      these day-to-day tasks that have to be done to maintain  
15      these programs aren't restrictive on us to be able to  
16      carry out our day-to-day work.

17                   **MEMBER HARVEY:** Because over all that  
18      you've got also the internal audit and self-assessment.  
19      So it's a lot to do for a small firm, a small facility, so  
20      I take your answer as it is. Okay, thank you.

21                   **THE CHAIRMAN:** Again, if I show my two bits  
22      on this.

23                   Anytime you do an organizational  
24      assessment, clarity and simplicity and accountability is  
25      the essence of what we're looking for, and I'm not sure

1 you can get it from those two charts.

2 If you're looking for safety culture I want  
3 to know who is going -- you know, if something goes wrong,  
4 who's accountable? Name, you know, and I'm not sure that  
5 putting some generic -- Organizational 101 textbook you  
6 can find those kind of organizational charts.

7 You're 18 people strong. There should be a  
8 very, very clear line of accountability for all the safety  
9 issues we're concerned with particularly. It would be  
10 also good for us to -- how do we map our 14 safety areas  
11 to who is accountable for them in the organization.

12 So, again, you may want to think about some  
13 -- for Day 2, some little bit of crosswalk between the  
14 organizational chart and accountabilities on safety.

15 **MEMBER HARVEY:** Another question to the  
16 staff.

17 In your presentation this morning on Slide  
18 14, you mentioned that there was one sampling well that  
19 the results were going up, and you said that there exists  
20 probably a plume. I'm concerned that with just one well  
21 you can say that there is a plume -- just by having one  
22 well showing such results.

23 **MR. ELDER:** I'll pass to Shizhong Lei, our  
24 geoscience expert to answer the question.

25 **MR. SHIZHONG:** For the record, my name is

1 Shizhong Lei.

2 The graph for Figure 1 on page 38, we just  
3 showed several readouts from several wells, but there are  
4 actually 15 monitoring wells and if we brought all of them  
5 together it doesn't look very clear, so we just selected  
6 the ones that are showing the highest numbers and if -- of  
7 course, you can't see whether there's a plume by looking  
8 at the one well.

9 When we look at look at all the monitoring  
10 wells and also the past results, we can say that there is  
11 a plume, there is some -- like some high concentrations of  
12 tritium in the groundwater system.

13 So it's by looking at all the wells that we  
14 get to this conclusion.

15 **MEMBER HARVEY:** I have other questions but  
16 maybe I'll come back later.

17 **THE CHAIRMAN:** Merci, Monsieur Harvey.  
18 Monsieur Tolgyesi.

19 **MEMBER TOLGYESI:** Merci, Monsieur  
20 Président.

21 On page 30 of 44, you are saying that noise  
22 -- that you should wear adequate hearing protection to be  
23 worn when you do several activities and you do it for  
24 extended period of time.

25 What does it means? If I do that for

1 seconds, for minutes, for hours I should wear protection?  
2 Why you don't have to wear protection, hearing protection,  
3 when you perform these tasks?

4 **MR. LEVESQUE:** Stephane Levesque, for the  
5 record.

6 What we're actually referring to here is,  
7 we have a small milling machine where we machine plastics  
8 so -- and we have an operator that cleans the parts with  
9 an air hose after he's done some of the cuts on the  
10 machine; so he does repeated use of the compressed air.

11 The machine itself doesn't create enough  
12 problems for him to wear ear protection, but I guess  
13 compressed air over a period of time may create some  
14 damage if you don't wear proper ear protection.

15 So what we've done is we've formalized,  
16 basically, our policy that if you're going to be doing  
17 certain tasks that you have to wear hearing protection,  
18 period.

19 The damage could occur only after a few  
20 hours of -- not damage, but the possibility of damage is  
21 doing these tasks over a number of hours over a number of  
22 days, but we've instituted policy just if you're going to  
23 perform these tasks to wear adequate hearing protection as  
24 it wasn't always done before.

25 **MEMBER TOLGYESI:** It's not necessarily an

1 extended period, but when you perform some task you should  
2 wear that.

3 **MR. LEVESQUE:** Yes.

4 **MEMBER TOLGYESI:** Okay. On page 14 of 44,  
5 you were saying you would be underlined at -- you were  
6 talking about suspending processing when precipitation is  
7 coming and any kind of precipitation -- rain, drizzle,  
8 freezing rain, hail, snow, et cetera. You are saying also  
9 that processing will be from seven in the morning to seven  
10 at night. So it leaves you when you calculate an hourage  
11 in a year, how many operating days you have?

12 **MR. LEVESQUE:** Stephane Levesque, for the  
13 record.

14 I can't tell you exactly how many operating  
15 days we have, but I know that with what we've experienced  
16 since the issuance of the licence that we've had plenty of  
17 leeway to be able to operate within the days that we've  
18 had been able to produce where it doesn't create a  
19 bottleneck in that area.

20 **MEMBER TOLGYESI:** So when you say 365 minus  
21 weekends and holidays, it's about 225 days, and when you  
22 subtract rains and drizzle, et cetera, it's going down.

23 Now, this stop and going of the processing  
24 has any effect on emissions? I mean, I think about the  
25 cars. When you have a car which is working on idle or

1 when you start it, it's also higher emission than when  
2 it's at full speed.

3 So it could happen that in one day you have  
4 stop and go because it's raining. You stop for full day  
5 or you stop just for the period of precipitation?

6 **MR. LEVESQUE:** Stephane Levesque, for the  
7 record.

8 There's no increased emissions by starting  
9 or shutting down the equipment, so there's not that effect  
10 of a car or a piece of equipment that you may be referring  
11 to, and we can stop operation only for a short period of  
12 time to a whole day.

13 So it has no effect on basically increasing  
14 our emission whether we stop for an hour or four hours,  
15 and what we've done is we've stopped as little as an hour  
16 and we've stopped as long as few days in a row.

17 **MEMBER TOLGYESI:** On page 19 of 44, you are  
18 talking about reduction in uranium bed heating cycles.

19 Just tell me, does uranium bed which is  
20 there to re-absorb tritium, that's what you're saying.  
21 And you have several -- you had before in 2005 -- I don't  
22 know how many cycles you made and how many you do now.  
23 It's a big difference?

24 **MR. LEVESQUE:** Stephane Levesque, for the  
25 record.

1                   The number of heating cycles that we used  
2                   to have for the uranium beds were 30 and what we found,  
3                   just to basically bring a little bit of history, we found  
4                   that with each cycle the ability of the depleted uranium  
5                   to re-absorb any tritium that's left in the system after a  
6                   process run takes place gets diminished, so one of our  
7                   first emission reduction measures in 2005 was to reduce  
8                   that by 30 percent.

9                   We found that it's had a very good impact  
10                  on reducing our emissions. We decided to reduce it again  
11                  by 25 percent and now a further 13 percent. I think the  
12                  numbers -- the number now is down to 13 heating cycles.

13                  **MR. TOLGYESI:** What happens to this uranium  
14                  bed once it reaches 13 cycles? It's disregard -- sent to  
15                  ---

16                  **MR. LEVESQUE:** Stephane Levesque, for the  
17                  record.

18                  The heating bed gets decommissioned, the  
19                  uranium it gets decommissioned and sent to a CNSC-approved  
20                  licensed waste facility.

21                  **MR. TOLGYESI:** Which means when you reduce  
22                  the cycles you increase this rejected -- this requirement  
23                  for the Commission?

24                  **MR. LEVESQUE:** Stephane Levesque, for the  
25                  record.

1                   Just maybe to put it in a little bit of  
2 perspective. When you're talking about a bed, you're  
3 talking about maybe a two cubic inch container and we're  
4 talking maybe about 10 -- a number of 10 containers.

5                   The amount of heating cycles, the  
6 containers themselves may last one to two years so, yes,  
7 you are increasing the volume of waste but you're not  
8 talking about a very large volume when we're talking about  
9 the amount of beds, the amount of depleted uranium that  
10 we're talking about.

11                  So I think the benefits from reducing the  
12 emission of tritium far outweighs the additional waste  
13 generated by using more uranium beds.

14                  **MR. TOLGYESI:** And my last in this round  
15 will be that you are saying on page 17 that you were  
16 reaching agreement with one of competitors to supply the  
17 majority of tritium light sources. This is re-using --  
18 old tritium process.

19                  Does it mean also that it helps you to --  
20 specifically stopping when there is precipitation or also  
21 reducing probably these cycles in uranium bed because you  
22 will not produce more because some of the products you are  
23 -- you having some suppliers from competitors?

24                  **MR. LEVESQUE:** Stephane Levesque, for the  
25 record.

1                   We would use our uranium beds less because  
2 we purchased some light sources from our competitor and  
3 also it would allow us to have -- not need as many  
4 operating hours, yes, because it reduces production.

5                   **MR. TOLGYESI:** Thank you, Mr. Chairman.

6                   **THE CHAIRMAN:** Okay, I think I'm getting  
7 hints that people need a break here. Why don't we take 10  
8 minutes and come back at 5 to 11. Thank you.

9

10 --- Upon recessing at 10:44 a.m./

11                   L'audience est suspendue à 10h44

12

13 --- Upon resuming at 10:58 a.m./

14                   L'audience est reprise à 10h58

15

16                   **MEMBER BARRIAULT:** Merci, Monsieur  
17 Président.

18                   On the issue of noise -- I guess hearing  
19 conservation program I should call it -- what is the level  
20 in decibels of the noise level in the milling machine, I  
21 guess is what you were saying?

22                   **MR. LEVESQUE:** Stephane Levesque, for the  
23 record.

24                   I'm sorry, I don't have that information  
25 with me. It's something I can provide prior to day two.

1                   **MEMBER BARRIAULT:** The reason I'm asking  
2                   that is because in order to have a hearing conservation  
3                   program you have to know what your noise levels are  
4                   because the exposure is based on the amount of time that  
5                   you're at that level.

6                   **MR. LEVESQUE:** Stephane Levesque, for the  
7                   record.

8                   That's why we hired an independent  
9                   consultant to come down and to do a noise survey, but  
10                  actually I think what he did is he fitted the employees  
11                  with little devices to be able to determine the amount of  
12                  noise they were exposed to throughout the period of a day  
13                  and then he made some recommendations following that that  
14                  we're following.

15                  **MEMBER BARRIAULT:** I would assume that he  
16                  would have the noise levels for you really and normally  
17                  you post them so that the employees can learn to treat it  
18                  accordingly in terms of noise pollution.

19                  My next question is my understanding is,  
20                  from discussions earlier, that you do have some  
21                  reclamation going on. You're using tritium to do  
22                  instruments that require less brightness is what I heard a  
23                  while ago. Now, am I correct?

24                  **MR. LEVESQUE:** Stephane Levesque, for the  
25                  record.

1 I think what we're not doing is the  
2 reclamation rig operating that piece of equipment, which  
3 was extracting tritium from the light sources. What we do  
4 do that's called a little bit -- you can say reclamation  
5 but it's more recycling. We're reusing the light sources  
6 as they are, whole, for other applications.

7 **MEMBER BARRIAULT:** Okay. Okay, I  
8 understand now. What you're doing is not removing the  
9 tritium from these light sources but using the light  
10 sources as they are when they come in?

11 **MR. LEVESQUE:** That's correct.

12 **MEMBER BARRIAULT:** Okay. Thank you.

13 The next question is on page 21 of 44 of  
14 your presentation. I'm a little confused with Item 8.1,  
15 passive air samplers. You say that your passive air  
16 sampler PAS number 13, third line down, is located at  
17 approximately 222 metres from the point of release and is  
18 used to calculate the dose to members of the public while  
19 at home. And yet, if I look at the table, PAS 4 is  
20 actually at 222 metres and PAS 13 is actually 62 metres.  
21 So I guess -- I'm not sure which one is correct and which  
22 one is wrong.

23 **MR. LEVESQUE:** I apologize for that.

24 That's an error. Thank you for noting that.

25 Yes, passive air sampler 4, the position

1 that we're looking at there labelled as passive air  
2 sampler 4 is the one that's used for calculating the dose  
3 to a member of the public while at home, and the other  
4 three that are labelled are the ones that are used for  
5 calculating the dose to a member of the public while at  
6 work.

7 **MEMBER BARRIAULT:** Now, if I look at your,  
8 I guess, picture lower down, they seem to be all in the  
9 same vicinity, I guess, in terms of where the plant is.  
10 If anything, PAS 4 is actually closer to the plant than  
11 the other ones, so am I correct there or am I just  
12 confused again?

13 **MR. LEVESQUE:** No, the yellow arrow  
14 basically points exactly where SRB is, and if you look at  
15 the three passive air samplers that are labelled on that  
16 chart as 2,13 and 1, they're located behind the facility a  
17 little bit of distance away from each other. It's just  
18 with the magnification of the map it's hard to be able to  
19 determine that there. Passive air sampler labelled as 4  
20 on that map is actually the one closest to our residence.

21 **MEMBER BARRIAULT:** Next question ---

22 **THE CHAIRMAN:** Sorry, just for my own -- it  
23 would be useful. What is your action level, you know,  
24 when you -- if one of those passive monitors -- do they  
25 ring a bell if something goes -- if you get into, let's

1 say, an elevated thing, is there something that triggers  
2 you immediately to something that went wrong?

3 **MR. LEVESQUE:** Stephane Levesque, for the  
4 record.

5 If you don't mind, if I can just bring you  
6 back to page 15 of 44 just to help answer the question.

7 That chart determines our emissions are  
8 monitored. What you're referring to is the passive air  
9 sampler, which is the first part in our environmental  
10 monitoring. It's an air monitoring station and those  
11 don't have a bell or a trigger. They're just collected  
12 once a month and we know the level once it's analyzed by  
13 the third party.

14 What we do use on an operational basis is  
15 what you see essentially on the left -- is the bubbler  
16 that basically monitors the emissions on a continuous  
17 basis and is sampled on a weekly basis. There is no bell  
18 associated with any trigger levels reached on that; it's  
19 just analyzed on a weekly basis, the only bells associated  
20 with the operation of the equipment.

21 But when you come to a day-to-day or  
22 minute-to-minute operation it relates to the tritium  
23 monitor that basically measures instantaneous releases in  
24 the stack area and are basically viewed by all our staff  
25 on our chart recorder. So that's what we use to basically

1 give action levels on minute-to-minute operation of the  
2 facility.

3 We do have a procedure that exceeding a  
4 level of 10,000 microcuries on our chart recorders for a  
5 certain period of time we stop production, and we also  
6 have action levels associated with levels that are  
7 determined by the bubbler, but those are weekly action  
8 levels.

9 **THE CHAIRMAN:** So I'm just trying to  
10 understand if something goes wrong there is no audio kind  
11 of alert system, or you don't believe that anything can go  
12 wrong like that?

13 **MR. LEVESQUE:** Stephane Levesque, for the  
14 record.

15 No, we definitely do, but it's by visually  
16 looking at the chart recorder that's for all the staff in  
17 the work areas to be able to see.

18 **THE CHAIRMAN:** Thank you.  
19 Dr. Barriault.

20 **MEMBER BARRIAULT:** Thank you, Mr. Chairman.  
21 On your Table 7, page 25 of 44 -- I'm just  
22 drawing this to your attention because of the levels of  
23 tritium in the drinking water. Assuming that Ontario is  
24 going to go to the new standards, how would you propose to  
25 handle these drinking water wells?

1                   **MR. LEVESQUE:** Stephane Levesque, for the  
2 record.

3                   Right now all we're doing as far as our  
4 operation, essentially we reduce emissions as low to  
5 reasonably achievable to be able to be at the lowest  
6 possible level in the groundwater.

7                   As far as legacy issues with those wells, I  
8 would first have to see what level was going to be  
9 accepted, whether it's the one that has been discussed at  
10 another level.

11                  Right now I know that we -- for a  
12 precautionary basis we supply bottled water to one of the  
13 businesses that's at the highest concentration because  
14 they're closest to our facility. We will probably look at  
15 arrangements of that sort or perhaps some of these people  
16 could be put onto the municipal water source because  
17 they're not that far. I don't know at this point.

18                  **MEMBER BARRIAULT:** So you do have a  
19 contingency plan then, if this should happen, as to how  
20 you will deal with this?

21                  **MR. LEVESQUE:** Stephane Levesque, for the  
22 record.

23                  That's something that we've been looking  
24 at. Our first priority was to really address the  
25 operations that we're doing now in anticipation for a

1 possibility of the level dropping, and the second part  
2 would be to look at that, yes.

3 **THE CHAIRMAN:** Staff, I'd like some  
4 comments about this. If Ontario does adopt this, what  
5 would be -- first of all, do you have any view as to --  
6 presumably they will give some time for this to come into  
7 effect?

8 And my second question is do we know -- you  
9 keep making reference that this plume is decaying over  
10 time. Will, during the licence -- five-year licence -- is  
11 there any possibility that those numbers will actually go  
12 into below the 20 becquerel per litre over time?

13 **MR. ELDER:** I'm going to ask Mike Rinker to  
14 answer, update on where we are in terms of that Ontario  
15 proposed standard.

16 **MR. RINKER:** Mike Rinker, for the record.

17 I'd like to state, first of all, that we're  
18 in very constant communication with the Ministry of  
19 Environment as they pursue the development of the  
20 standard. We're not aware of when or if this would be  
21 approved at this time.

22 The next point I would make is that we feel  
23 that the standard of 20 becquerels per litre is being  
24 developed and, as we do the levels that are in  
25 groundwater, there's two ways that you would look at it.

1 One is, is there a risk to health based on 20 becquerels  
2 per litre or the values that we see observed around SRB,  
3 or are we looking at this in terms of pollution  
4 prevention?

5 So our answer is that there is not a risk  
6 to health based on the existing levels in groundwater  
7 around this facility. However, when we consider dose to  
8 the public to levels as low as reasonably achievable, we  
9 expect SRB to maintain their emissions as low as they are  
10 currently and much lower than they were in the past, and  
11 that provides adequate protection to the environment.

12 How would we respond should Ontario adopt a  
13 standard of 20 becquerels per litre in drinking water? I  
14 think we'd have to look at contingencies and all of the  
15 supplies of drinking water are also on the municipal water  
16 treatment system, which is currently well below 20  
17 becquerels per litre.

18 So perhaps access to these wells or  
19 something like that would have to be considered in the  
20 future, or alternate supplies, which SRB is adopting at  
21 the moment.

22 **THE CHAIRMAN:** Just for the record, just so  
23 we are very clear about the safety dimension here, the  
24 international benchmark is 7,000 becquerels per litre and  
25 what I hear you saying is that you believe that the

1 numbers right now, as Table 7 depicts, are safe for  
2 drinking water. That's our position right now, regardless  
3 of what Ontario plans are?

4 **MR. RINKER:** That's correct. Mike Rinker,  
5 for the record.

6 Seven thousand (7,000) becquerels per litre  
7 is the current Canadian standard for drinking water and it  
8 corresponds to a public dose of 0.1 millisieverts per  
9 annum. That is considered safe.

10 All emissions from SRB currently are not  
11 posing a risk to human health at this time.

12 **THE CHAIRMAN:** Thank you. Dr.  
13 Barriault?

14 **MEMBER BARRIAULT:** This brings me to my  
15 next question. So obviously, in a decommissioning plan,  
16 there is no intention to clear up the water table. Is  
17 that correct?

18 You mention on page 24 -- going into 26  
19 then actually -- the decommissioning plan and the  
20 financing associated with that. So as part of that plan,  
21 there was no intention of cleaning up the water table. Am  
22 I correct in assuming this?

23 **MR. LEVESQUE:** Stephane Levesque, for the  
24 record.

25 Yes, you are correct. We were basing --

1       expecting that the levels would drop to acceptable levels  
2       or even lower levels within a number of decades to decay,  
3       and the current operating mode of the facility.

4                   **MEMBER BARRIAULT:** Thank you. Next  
5       question, Mr. Chairman, to CNSC staff.

6                   We heard earlier how it is assumed that the  
7       level of the water table, of tritium in the water table at  
8       the base of the stack, is going up but that's based on a  
9       movement of the plume, I understand.

10                  Is it possible for the next -- to have a  
11       map of that plume in more detail so we can understand the  
12       extent of it, how big it is, what the levels are at  
13       different areas? I know that there's a map here, but it  
14       doesn't seem to be quite clear.

15                  **MR. ELDER:** For day two, we will get you --  
16       in advance of day two we will get you a map of the plume.  
17       We have all the data, it's just -- yes.

18                  **MEMBER BARRIAULT:** Exactly, and that's why  
19       I'm wondering because I'm wondering if we are going to see  
20       changes in some of the other wells also. This plume is  
21       moving in different directions. So I'm just trying to get  
22       some understanding of what's going on here.

23                  On page 37 of the CNSC presentation, I've  
24       had a lot of difficulty in trying to understand that table  
25       and maybe somebody can explain it to me -- page 37, Table

1           7. It's based on becquerels per week and I guess I'm not  
2 clear what the, you know, the "7.75 east plus 12" whatever  
3 that is, and so on and so forth.

4                   **THE CHAIRMAN:** It's 10 to the 12th -- 7.7  
5 10 to the 12th.

6                   **MEMBER BARRIAULT:** Okay.

7                   **THE CHAIRMAN:** The next one is (inaudible)  
8 10 to the 10th.

9                   **MEMBER BARRIAULT:** Yes, and so on and so  
10 forth.

11                   But what I'm trying to understand, is it  
12 going up, down or sideways? What's happening here?  
13 That's Table 7.

14                   **MR. ELDER:** Peter Elder, for the record.

15                   What you see on that one in terms of weekly  
16 -- is the fact that it reflects the amount of production,  
17 so it's related to when they were operating.

18                   So what you would -- during the periods  
19 where they have been operating, it's been relatively  
20 constant against the action level, which is the first  
21 column. And it's essentially just showing that they have  
22 not been operating near their action level over that  
23 period.

24                   **MEMBER BARRIAULT:** Okay.

25                   **MR. ELDER:** Okay.

1                   **MEMBER BARRIAULT:** Is there a simple ---

2                   **MR. ELDER:** Not in terms of -- it's very  
3 difficult, and I think all these figures -- and we've put  
4 some caveats on some of them, maybe all of them -- are  
5 saying because of the history of the operation that  
6 they're only operating for half of 2008 and then we don't  
7 necessarily have all the 2009 data yet. We don't have  
8 enough information for trending. We can just say they  
9 were in comparison against the limits and this one is  
10 against the action levels.

11                   So it's taking -- not looking at it from an  
12 annual basis but looking at it weekly against their action  
13 level, which is a weekly base.

14                   **MEMBER BARRIAULT:** So I would assume that  
15 the public understands all of these tables very clearly.  
16 I'm sorry for being facetious.

17                   **MR. ELDER:** No, I know, it's in terms of  
18 recognizing the same, that there has been a lot of public  
19 interest in these facilities, so we wanted to make sure  
20 that we were giving all the information.

21                   We recognize it's more technical, which is  
22 why it's as an addendum rather than in the main body of  
23 the CMD.

24                   **THE CHAIRMAN:** But again, I thought we had  
25 agreed that we are going to also use things like

1 percentage of action level, percentage of the derived  
2 limits, the regulatory limits, in addition to the  
3 exponential ---

4 **MR. ELDER:** And this is what -- that's what  
5 we want to do and I'll just say one of the issues that we  
6 have had with this facility is we wanted to give you a  
7 five-year trend or as long a trend as we could. In that  
8 period, their limits changed.

9 So if you do a percentage, for example, on  
10 Table 6, as a percentage of release limits, their 2005  
11 number is well over the current release limits. So  
12 hopefully by next period it will make sense to give you as  
13 a percentage of -- once those release limits are stable,  
14 then we can give you properly as a trend -- a trend as  
15 percentage.

16 This is a complicated file because we we  
17 tightened the limits halfway through a five-year  
18 monitoring period essentially.

19 **THE CHAIRMAN:** We understand what  
20 percentage of 100 percent will mean. But nevertheless,  
21 okay, if you look at Table 6, 6.72 is the current licence.  
22 The next one is 2.47, so you exceeded it, so you put 120  
23 percent or whatever the number is.

24 We have no -- again, it's a trend that  
25 would be easier to read, rather than trying the mental

1 gymnastic of converting exponentials from one year to  
2 another.

3                   Anyhow, it's more for public communication  
4 purposes that you have got to find an easier way of  
5 conveying the message.

6                   **MEMBER BARRIAULT:** That's all for now, Mr.  
7 Chairman, thank you.

8                   **THE CHAIRMAN:** Thank you. Dr. McDill?

9                   **MEMBER McDILL:** Thank you. Two questions.  
10                   I would also like to see the plume, that's  
11 the first one, because a moving plume that close to the  
12 stack is a little bit hard to get your head around. If  
13 the numbers are back up to 80,000 they must have been  
14 huge, if the plume is moving onto them. So if the plume  
15 is moving over that, then what was it before? We've had  
16 three years of decay now roughly and a 12-year half-life.

17                   So the plume would be helpful for me. I'm  
18 also concerned about how SRB is going to react to the  
19 change in the water quality guidelines with apples locally  
20 that are potentially going to be above it. Even if it's  
21 safe, there's a public perception that is going to have to  
22 be part of what SRB does.

23                   So my first question to SRB is how are you  
24 going to interact with the public if this number -- any  
25 number under 7,000 -- comes in?

1                   **MR. LEVESQUE:** Stephane Levesque, for the  
2 record.

3                   We've had preliminary discussion with our  
4 contact with the Ministry of the Environment and from what  
5 I understand is that it's something that's going to have  
6 to be done in conjunction with the Ministry of the  
7 Environment.

8                   We have remained open with the public and  
9 not really necessarily comparing our levels to the  
10 drinking water limit but really explaining to them what  
11 the effect and doses associated with the levels that are  
12 in their drinking wells in anticipation that level may  
13 change because no matter what the level is, the risk and  
14 the dose to the public will remain the same.

15                   So that's the way we've achieved to --  
16 we've decided to do it is not put as much emphasis on the  
17 7,000 but more on what the effect on a member of the  
18 public would be. And if we move towards a lower number,  
19 that's what we will continue to do to really explain what  
20 the levels mean and what the effect on the individual  
21 would be from having drunk that water and continuing to  
22 drink that water and what we are going to do in the future  
23 with the MOE I guess with respect to the use of those  
24 wells.

25                   **MEMBER McDILL:** Perhaps staff would like to

1 comment on the public perception of, let us say, a  
2 drinking water guideline of 20 becquerels per litre,  
3 albeit exposure is exposure at a safe level, and apples  
4 that come in at 255. Staff is going to have to deal with  
5 this as well.

6 **MR. ELDER:** I'll ask Mike Rinker to give  
7 you some more details and given that we are again working  
8 very closely with the Ontario Ministry of Environment  
9 about how this would be implemented.

10 **MR. RINKER:** It's Mike Rinker, for the  
11 record.

12 In general, I think we're aware that the  
13 dose from an apple is very different than the dose from  
14 drinking water. So it's a question of how do we  
15 communicate the risks of tritium to the public in a way  
16 that is comprehensible and not overly scientific.

17 In parallel to the SRB hearing process,  
18 we're working on a tritium research study based on the  
19 direction of the Commission from January 2007. There's  
20 been a number of studies that talk about how tritium would  
21 be released from facilities and how it behaves in the  
22 environment and followed up with what are the human health  
23 implications or considerations in evaluating the safety of  
24 the public when exposed to tritium.

25 Those research studies are coming to

1       fruition and we're in the process of putting together a  
2       synthesis report that would consider the results of all of  
3       these research studies into one sort of summary report  
4       that our intention is to release to the public in April of  
5       this year.

6                       So in general, staff are intending to  
7       engage the public on explaining the risk to tritium in  
8       general and that's how we would be dealing with  
9       communication of risk of tritium to the environment,  
10      whether into apples or drinking water.

11                      **THE CHAIRMAN:** Can I also jump in? As you  
12      know, tritium is getting a lot of press in Vermont because  
13      of the Yankee plant that had some tritium issues. So it's  
14      always interesting in trying to deal with comparison with  
15      other regulators like the EPA, NRC and Europe.

16                      So when you come back with some -- for day  
17      two it may be interesting for us to actually try to deal  
18      with some of those issues in comparison as to what's  
19      happening in other jurisdictions.

20                      **MR. LEVESQUE:** Excuse me. Could I add  
21      something, please, for Dr. McDill?

22                      One of the things, to give you a little bit  
23      of insight into our interaction with the public -- one of  
24      the things we have noticed is other than the members from  
25      a local interest group, what the general public really

1 wants to know is not necessarily dose associated with  
2 tritium but dose associated with our operations compared  
3 to dose from other known sources of radiation, whether  
4 it's an x-ray, whether it's radon inhalation or anything  
5 like that.

6 So what we've done a lot is a lot of  
7 studies on trying to identify from the ICRP and other  
8 known sources -- and you can see that all over our website  
9 and our literature -- is to basically compare the dose  
10 from drinking water from a well, consuming an apple that's  
11 exposed from our facility and comparing that to radiation  
12 doses from other known sources like an x-ray, sources  
13 related to natural radiation, taking a flight, cosmic  
14 radiation with respect to that.

15 So that's what we've done a lot of is to  
16 try to compare because that's the only way that really the  
17 general public has to compare is to understand what the  
18 dose is from other things that they are doing every day.

19 **MEMBER MCDILL:** Thank you.

20 Two other questions. On page 60 of the  
21 proposed licence change, in the second box, there's a  
22 reference to another company and I think that needs to be  
23 removed. The wrong company, yes -- 60. It's in the  
24 proposed licence changes. There is a reference to SSI.  
25 To be specific, it says, "SSI will not be decommissioning

1 the facility". That's just a typo? I think we need to  
2 get it off and corrected though.

3 And my other question is in the -- also in  
4 the licence conditions handbook, the units of choice  
5 appear to be curies and I have no problem with curies but  
6 it's a little hard I think on the public. Is the reason  
7 for curies on page -- there's one on page 21 and there's  
8 another one on page 13. Is that because that's how it's  
9 measured on the chart recorder?

10 **MR. ELDER:** Those are why we have kept  
11 those in curies and we will convert them in the final  
12 version to becquerels as well. We've kept them because  
13 actually those are the numbers that have been discussed at  
14 previous hearings. They were discussed and proposed in  
15 curies. So we were just trying to highlight the fact that  
16 they haven't changed, but when we get the final version,  
17 it will be in becquerels as well.

18 **MEMBER MCDILL:** Thank you. Since we're  
19 going to a new licence condition handbook, I was perplexed  
20 as to why they were staying as curies, but I understand  
21 the logic. Thank you.

22 Mr. President?

23 **THE CHAIRMAN:** Thank you.

24 Dr. Barnes?

25 **MEMBER BARNES:** I wonder if I could just

1           come back to the organizational chart again? It confused  
2           me too, but 18 employees, if we take off the production  
3           technicians that you say are not really there, then we're  
4           left with 15 boxes. So where are the three missing  
5           people?

6                         **MR. LEVESQUE:** Stephane Levesque, for the  
7           record.

8                         The 15 boxes, I guess the other three would  
9           be the production technicians.

10                        **MEMBER BARNES:** Okay.

11                        **MR. LEVESQUE:** Sorry to interject. Our  
12           production technicians have a number of years of  
13           experience and they usually would rotate between any of  
14           those production departments that you see below.

15                        **MEMBER BARNES:** So the set of boxes which  
16           are I would kind of think of as management, like human  
17           protection coordinator, environment protection  
18           coordinator, are they full-time jobs in those boxes or do  
19           they come down to some of the production activities as  
20           well in their work?

21                        **MR. LEVESQUE:** Stephane Levesque, for the  
22           record.

23                        They are full-time positions.

24                        **MEMBER BARNES:** And on this chart, where  
25           would -- if there were to be five new positions, where

1 would they go -- your anticipation.

2 **MR. LEVESQUE:** Stephane Levesque, for the  
3 record.

4 They would all be production technicians.

5 **MEMBER BARNES:** Okay. Thanks.

6 And again, just on the committees that you  
7 listed on page 6 there, typically how many people serve on  
8 those committees?

9 **MR. LEVESQUE:** Stephane Levesque, for the  
10 record.

11 Three to four.

12 **MEMBER BARNES:** Okay. Thanks.

13 And I'd like to come back to the  
14 groundwater issue again and staff showed a plot of the  
15 changing trends in four of the groundwater wells. And the  
16 one that has increased though is the MW06-10 well. An  
17 explanation for the increase -- so there's been this  
18 increasing trend. It declined from 2006 down to late  
19 2007, but really since December 2007 up to the present,  
20 although it's fluctuated obviously, there's an increasing  
21 trend from perhaps as low as 10,000 becquerels per litre  
22 up to as much as 18,000 becquerels per litre last  
23 September.

24 But this is at the base of the stack, this  
25 well, and so it has nothing to do with the plume. In a

1 sense, it might be the origin of the plume.

2 Could staff respond to this?

3 **MR. LEI:** CNSC, Shizhong Lei.

4 That's a well, yes. It is right below the  
5 stack. However, if we look at the monitoring well number  
6 18 -- sorry, MW06, the number 10, which used to have the  
7 highest -- which used to detect to the highest tritium  
8 concentration in the groundwater. This well is upgrading  
9 to the well that's showing a higher number now.

10 In our opinion, there are lots of -- like  
11 several factors that would affect the fluctuation of  
12 tritium in the groundwater. This one is right near the  
13 stack and could be very much influenced by the surface  
14 storm water surface flow as well.

15 And also it's also affected by the tritium  
16 in the soil and when you have water, spring rain water  
17 infiltrating down, it might be flushing some of the  
18 tritium in the soil into the groundwater. So it's a  
19 combination of movement of the tritium in the groundwater  
20 from upgrading towards the river and the changes of  
21 tritium in the soil as well as the surface water that's  
22 created this kind of increase.

23 However, I also want to note that after we  
24 prepared this graph, SRBT has submitted additional  
25 monitoring data, and the next three months is following

1 the number showing in the graph, are actually showing a  
2 decreasing trend. So current level in January 2010, the  
3 tritium concentration in this well, MW0610, has dropped to  
4 below 60,000 becquerels per litre.

5 **MEMBER BARNES:** Which is what it shows in  
6 November anyway.

7 I guess I have trouble with the  
8 explanation. I mean, fundamentally we have an increasing  
9 trend over -- since really December 2007, right -- through  
10 to December 2009? Over a two-year period, we have an  
11 increase at the same time that SRBT is telling us they are  
12 reducing emissions.

13 You look at the emissions coming off the  
14 rainspouts. They're all being reduced and yet the problem  
15 child in this whole business for the really extreme  
16 concentrations initially and which triggered all the work  
17 and all the expense of the groundwater was the stack,  
18 right?

19 And there were these extremely high  
20 concentrations at the stack and so most of the effort has  
21 gone in to reducing the amount of emissions in the  
22 building so that the stack emissions would be less, and  
23 then there was the issue of how much was actually being  
24 precipitated on the roof around there. So there was  
25 monitoring at the rain spouts; all of this is going down.

1           I don't understand why this particular well  
2           at the base of the stack has been showing this increasing  
3           trend over, basically, a two-year period from late 2007 to  
4           late 2009.

5                   **MR. LEI:** Shizhong Lei, for the record.

6           Yes, it is very difficult to differentiate  
7           as to what percentage of contribution is from the --  
8           directly from the position under the stack or what's the  
9           percentage of contribution from the movements of the  
10          tritium in the groundwater. And, as I said earlier, it's  
11          a kind of -- in our opinion it's a combination of the  
12          factors and that we are paying very close attention to the  
13          trend -- to the changes to this well.

14                   Hopefully, additional data will give us  
15          more explanation, but for the past three or four months  
16          the tritium concentration in this well is going down.

17                   **MEMBER BARNES:** I don't understand from the  
18          groundwater that there's movement of groundwater towards  
19          the base of the stack in such a way that it would actually  
20          increase the values at the base of the stack. It would  
21          have to come from some other area away from the base of  
22          the stack which traditionally has been the most  
23          contaminated site.

24                   So your argument is that increase in  
25          tritium is coming from somewhere else and I don't

1 understand where that higher value would be coming; to  
2 introduce an increasing trend at the base of the stack  
3 where all the other wells that you're reporting here are  
4 significantly below that level.

5 **MR. LEI:** Shizhong Lei again.

6 Those wells that are showing a lower  
7 concentration of tritium are actually further away from  
8 the stacks.

9 **MEMBER BARNES:** But in the chart that SRBT  
10 shows with the "R" wells, they're all significantly lower  
11 than this trending upward of 06-10.

12 **THE CHAIRMAN:** You want to answer?

13 **MR. LEVESQUE:** If I could add something,  
14 please. Our understanding is very similar but I would  
15 like to maybe explain it differently. I have a little bit  
16 more detail.

17 If you can ever get your hands on file and  
18 it's referenced in our submission, it's our comprehensive  
19 groundwater report that was from January 2008. In  
20 Appendix I of that report, we have data to show soil  
21 moisture of soil taken at different levels when we drilled  
22 the wells, including well number 10, and in that I think  
23 we can understand a little bit more.

24 The primary mechanism that's happening is  
25 that, first, it's important to know that anything that

1 we're seeing in the well today is part of what's already  
2 into the ground and not really what we're doing today or  
3 releasing today.

4 If you look at the soil moisture at  
5 different slices of soil from the top surface all the way  
6 to the bottom of the well for this sample that was taken  
7 back I think in 2006 when the well was drilled, you can  
8 see that concentrations near the top surface -- because  
9 our emissions were a lot lower -- are in the order of  
10 70,000-odd becquerels per litre.

11 At that time, when the well was first  
12 drilled and monitored, the actual bottom layer of the soil  
13 was at 150,000 and that's exactly roughly what we were  
14 measuring in that well was 150,000.

15 We predicted pretty accurately that based  
16 on what saw in different slices in the soil, that right  
17 above the 50,000 the next layer was at 60,000. So we knew  
18 that the concentration that would be monitored in the well  
19 as the emissions moved down over time -- because it takes  
20 about six to seven years depending on the well to move  
21 down -- that the well would drop probably to 60,000.

22 Then it goes down to 10,000 for the next  
23 slice up. So we expected it to lower and it has. But  
24 then there's an incline again further slices up and we're  
25 basically seeing what we had expected. So until that six

1 or seven-year cycle has gone through and we get to the top  
2 layers of our emissions reductions from 2005, you won't  
3 see the steady decline in reduction. You're going to have  
4 peaks and valleys and that's for all the wells. I think  
5 it's a little hard when we just focus on 10 because we see  
6 that in other monitoring wells as well.

7 I know that CNSC staff is just trying to  
8 illustrate it with a number of the wells with the highest  
9 concentration, but we see that in soil cores for other  
10 wells that we've looked at that have much lower  
11 concentration. It's fluctuation.

12 So until I think we have that six to seven-  
13 year period, we're not going to be able really to see or  
14 get the full effect of what we see today.

15 **MEMBER BARNES:** So based on that logic and  
16 on this graph that is on page 14 -- in the PowerPoint  
17 number page 14 -- all staff, what do you explain -- how do  
18 you explain the drop of values of MW0610 from September  
19 '06 to December '07 from roughly 150,000 becquerels per  
20 litre down to maybe 10,000? Please interpret that for us.

21 **MR. LEVESQUE:** Yes. Stephane Levesque, for  
22 the record.

23 Well, again, if I look at this chart that  
24 I'm looking at -- and, just for the record, in Appendix I  
25 of our comprehensive report dated January 2008, Table 1A

1 that looks at the soil cores from the top of the well  
2 right to the bottom where it was sampled -- that bottom  
3 layer of soil was 150,000.

4 It takes an amount of time for the soil  
5 moisture from higher levels of soil to make its way down  
6 to the sampling point and the next slice of soil that was  
7 taken, the moisture was a 60,000.

8 And then one that's just above the 60,000  
9 was at 10,000. So we basically expected the well to drop,  
10 looking at that data.

11 There's also another mechanism that happens  
12 that maybe three or four feet away from that well behind  
13 it towards groundwater that there's some water that was at  
14 a slightly higher concentration moving as well.

15 So, yes, it's true, there is two  
16 mechanisms, but the main mechanism we're looking at is the  
17 vertical or downward migration of the soil moisture to  
18 that sampling point.

19 And if you look, for example, where  
20 emissions were the highest in 1999-2000, that layer might  
21 have been right at the bottom. Then you got the emissions  
22 from 2001 right above that, and we'll see that next year,  
23 and so on and so forth until we get to 2005 and '06 when  
24 they've dropped quite considerably.

25 **MEMBER BARNES:** Do staff have any comment

1 on that?

2 **MR. RINKER:** Mike Rinker, for the record.

3 We do agree with that analysis.

4 I want to emphasize we want to come back to  
5 you with some information about the plume, for example.  
6 We're talking about an unsaturated plume so, like Mr.  
7 Levesque has explained, the migration of tritium from  
8 above the sampling point as opposed to a plume that is  
9 moving laterally. And we'll describe that in more detail  
10 when we come back to you.

11 **THE CHAIRMAN:** Is it possible for day two -  
12 - by day two, which is May 19, we will have more data,  
13 presumably a couple of more months at least.

14 And can we -- the question is, is it  
15 possible between now and then to actually model the plume  
16 as it was and its interaction with the structure of the  
17 soil?

18 And what I'm aiming for is I'd like a  
19 prediction of where the decay is going. So what would be  
20 your analysis of those wells -- predict the wells' values  
21 at the end of the five-year licence. Is it all doable?

22 So we can actually track where the plume is  
23 going and put in the three variables from air, soil and  
24 water into this picture. I mean, you have enough data, I  
25 thought, to do this.

1                   Anybody? Anybody want to take it on?

2                   **MR. LEVESQUE:** Stephane Levesque, for the  
3                   record.

4                   From what I know of doing that exercise, I  
5                   know the hydraulic conductivity recovery rates, soil  
6                   consistencies of all the wells are different, so they will  
7                   all recover at a different rate, all at a different time.

8                   I'm not saying it's impossible. From what  
9                   I can see it would be an enormous exercise to be able to  
10                  do it over all the wells.

11                  **THE CHAIRMAN:** I don't think it's as  
12                  complicated because you can get the geology of the place  
13                  together with the soil numbers that you've been measuring,  
14                  together with the historical data. You probably can track  
15                  it.

16                  Now, I'm not an expert in this, probably  
17                  Dr. Barnes can probably give us advice here, but I've seen  
18                  it done before. So I don't know if it's doable in the  
19                  time for May.

20                  **MR. RINKER:** Mike Rinker, for the record.

21                  I think because of the very localized and  
22                  small scale where we're looking at, the type of numerical  
23                  codes that are out there wouldn't be supported with the  
24                  data that we have.

25                  However, what we can do is explain more

1 fully our understanding, based on the data that we've  
2 discussed today, provide a conceptual model with diagrams  
3 that explain what our concepts are, and make predictions  
4 of how we see the concentrations in these wells to evolve  
5 over time, based on our understanding. That in itself is  
6 a model. It's not MODFLOW or these other codes that are  
7 out there but we can do that.

8 **THE CHAIRMAN:** But I think, given the  
9 legacy history of this site -- I mean, this is really the  
10 most important kind of an issue that's facing us in terms  
11 of environmental protection, so I think it will be useful  
12 to get some of this data. So if you can, see what you can  
13 do to explain better.

14 Dr. Barnes, back to you.

15 **MEMBER BARNES:** Thank you.

16 I just make the point that I think the  
17 impression one is given by SRBT, and to some extent by  
18 this graph of staff, is that things are improving -- and  
19 from the well data.

20 All I could see on the MO-610, which was  
21 the source of the problem, was that there was actually an  
22 increasing trend, which surprised me. And I'm not really  
23 convinced by the arguments that have been put forward for  
24 the explanation of that.

25 I understand that it's complex stratigraphy

1 in the well. On the other hand, each data point is  
2 supposed to be sampling the same well as opposed to  
3 sampling different levels in the stratigraphy, if you  
4 like, of the well. And therefore, when we see a  
5 significant drop I think we're led to believe that that is  
6 a good thing, as opposed to some complex variable of  
7 tritium flowing in from adjoining areas or whatever.

8 So I'll leave it and hope maybe staff could  
9 come back and just comment maybe again on the basis of  
10 some of the data which aren't presented today but have  
11 been before, why there should be a trend in MO-610 over  
12 the last 18 months to two years. Because that does  
13 concern me because that was the whole thing that triggered  
14 it, and with the reduced work effort and significant  
15 efforts of SRBT to lower emissions I'm surprised that that  
16 would increase, period.

17 If I can come back to SRBT, on your Table  
18 7, which is the wells used for drinking water -- it's on  
19 page 25 of 44 of your submission -- Table 7, page 25 of  
20 44. So again, if I interpret this, these are wells that  
21 are -- these are the RW wells as well as B1, B3. In the  
22 paragraph below you refer to B2, which isn't used for  
23 drinking water but the values aren't shown.

24 But just let's -- on this table the middle  
25 column there is the highest measured since 2006 in

1 becquerels per litre and you're comparing it to the  
2 average of 2009 and showing a decrease in percentage. And  
3 I think what you're trying to show the reader is that  
4 there have been significant decrease in the amount of  
5 tritium in the drinking water.

6 But how can you compare the highest  
7 measured value since 2006 -- i.e. 2006, '07, '08 and '09 -  
8 - with the average -- the average in 2009? I mean, this  
9 is comparing apples and onions, to be facetious here, for  
10 what you're measuring. I mean, why don't you compare the  
11 highest since 2006 versus the highest in 2009? I mean,  
12 the highest since 2006 could be in 2009 and you're  
13 comparing it to the average. So it seems to me that  
14 showing those decreases in that way makes no sense at all.

15 **MR. LEVESQUE:** Stephane Levesque, for the  
16 record.

17 I'm sorry that it's perceived that way.  
18 What I was trying to show, and one of the problems there,  
19 is that some of those wells have been monitored for a lot  
20 longer than others so it was hard to take one single  
21 point, say, between that date and that date so much it's  
22 decreased, so we just basically showed the graph in that  
23 way.

24 But I understand your comment and we could  
25 have done it differently. It was just the way to explain

1 to somebody that the highest level we've ever measured in  
2 those wells were those and that was the average for the  
3 last year. But I understand and respect your comment.

4 **MEMBER BARNES:** What we've been hearing  
5 about is, to some extent, the difficulty of actually  
6 getting a particular figure at one particular time from  
7 our last conversation on one well. But why not show, for  
8 example, in a table, the average of these wells in 2006,  
9 '07, '08, and '09 -- all right -- and then if there's a  
10 trend then we can see a trend; or the highest in each of  
11 those. If we're concerned about the high point show the  
12 high. But I don't think you can mix this.

13 Staff, do you have a comment on how this  
14 information would be better presented?

15 **MR. ELDER:** We agree that it's not  
16 necessarily the best way to present the data. If you look  
17 at page 42 of the CMD, we essentially have the same data  
18 on a -- it's on a logarithmic scale that gives you all the  
19 data points for essentially the same -- the residential  
20 wells. It doesn't have all the B wells but it has all the  
21 RW wells.

22 **MEMBER BARNES:** Right.

23 **MR. ELDER:** And you can see there's a trend  
24 but there isn't -- you know, as you say, it's not across  
25 the board and saying it's -- so we think it's better to --

1 obviously we gave you the real data to see the trend,  
2 rather than making a comparison between an average and a  
3 highest in value.

4 **MEMBER BARNES:** But we're here and one of  
5 the problems with the SRBT has been the tritium  
6 contamination. Of particular concern to the public is the  
7 contamination in the drinking water of the wells in this  
8 area, right. The vegetables is another thing. And here  
9 the licensee is trying to convince the Commission and,  
10 through this public document, the public in this area that  
11 you've had a significant decrease and I think this is an  
12 inappropriate way to present that data, and the data that  
13 is shown in the figure -- the one I also refer to -- again,  
14 doesn't necessarily -- well, maybe on Day 2 where SRBT  
15 could either show a different graph or refer to the one  
16 that staff has presented, to give an indication to the  
17 public about what is the real trend in here for wells used  
18 for drinking water.

19 I think it is an important bit of  
20 information, but I don't think how it's presented is a  
21 fair presentation and can be misinterpreted, and I think  
22 it's presented in a way that gives a misinterpretation,  
23 which is not in the public interest.

24 If I could turn to a different topic on  
25 page ---

1                   **THE CHAIRMAN:** Sorry to interrupt again  
2 but, again, I had a question on this chart of staff that  
3 you actually show the actuals. Some of the wells I don't  
4 see much reduction over the periods, right?

5                   I mean, if you look at -- I understand it's  
6 a logarithmic kind of scale but some of the wells are, if  
7 you look at -- I don't know what's the -- it's hard to  
8 read, by the way -- RW 6? Hardly any movement. If you  
9 look at the square of 5, hardly any movement.

10                   So there's really different messaging here  
11 between the two data as SRBT and staff here, right? So,  
12 again, it's coming back to trying to explain these are the  
13 most important issues of SRBT as Dr. Barnes just pointed  
14 out.

15                   I think it will be good for us to explain  
16 exactly what's going on.

17                   **MEMBER BARNES:** If I could just comment.

18                   I mean, we had a problem; people have  
19 referred to it in this hearing today as a "legacy issue".  
20 It's actually, you know, a relatively short-term legacy  
21 issue which has been with the release of tritium primarily  
22 through the stack, going into the air and then being  
23 washed out into the soil around, right? I mean, this is  
24 basically what has been the problem and it's contaminated  
25 progressively -- the groundwater -- and there's a plume

1 effect in the groundwater.

2 And that's where a lot of it is being  
3 channelled, and the primary source was the base of the  
4 stack for the really high, high concentrations were  
5 probably -- for every small amount versus the larger area  
6 being contaminated by air emissions.

7 Once it gets into the groundwater, I think  
8 what we know and what its obvious toll is, it's going to  
9 take decades because of the slow movement of the  
10 groundwater combined with the decay factor for tritium in  
11 this sort of environment, but what we're looking at here  
12 is the plant reducing those emissions and then, over time,  
13 this being translated into lower values in the wells. But  
14 I think it will take a long time to see those values, so  
15 it doesn't surprise me that we're not seeing very much.

16 What I was objecting to was the way that it  
17 was portrayed here, to suggest that there's been a  
18 significant decrease in the drinking water, and I think  
19 the graph that you've just shown suggests that that  
20 doesn't demonstrate it at the present as far as the public  
21 is concerned.

22 **MR. LEVESQUE:** Stephane Levesque, for the  
23 record. If I could just make an additional comment.

24 I've had a lot of personal discussion and  
25 one of them was with the city council when we did our

1       yearly presentation on May 19<sup>th</sup> and with members of the  
2       public and perhaps -- and I see your point, by saying that  
3       the graph -- the table -- could have been done where  
4       averages per year. I respect that. What I'm trying to  
5       say is that it's just a different way to explain it.

6                       When we talk to members of the public,  
7       including council when we did a presentation, and they  
8       asked about well 10, the number that they all want to know  
9       is what was ever the highest at that well. Like, well  
10      number 10, well, okay, it's at 60-80,000 now, Mr. Levesque  
11      you're telling us, what was the highest it ever was;  
12      160,000. Okay.

13                      People in the public, when you give them a  
14      concentration at the well, they always compare it to what  
15      the highest level that was ever measured in their well  
16      because that's the highest they've ever seen.

17                      I understand that it may portray something  
18      different, but really that table to me is intended for  
19      those members of the public I've spoken to, to really  
20      understand where the level is at today on average compared  
21      to what the highest was ever measured.

22                      It wasn't meant for anything different but,  
23      yeah, it can be represented differently and we can surely  
24      do that for future ---

25                      **MEMBER BARNES:** Well, you could show -- if

1           you want to go with the highest for that purpose then show  
2           the highest in 2009 as opposed to the average in 2009.

3                   **MR. LEVESQUE:**   Stephane Levesque, for the  
4           record.

5                   Again, I'm sorry, and I don't want to get  
6           into an issue, but members of the public look at what the  
7           highest they've ever had was.  When they were asking about  
8           the well at the base of the stack, I'd given people the  
9           data only for the last year for the annual compliance  
10          report and people wanted to know what it was years ago --  
11          what the highest ever was, but I get your comment and I  
12          have no problem with it.

13                   **MEMBER BARNES:**  I'm just going to a few  
14          other points, Mr. Chair.

15                   On page 29 of 44, you report the visits  
16          from the HRSDC, human resources and so on, twice in 2008  
17          but none in 2009.  So I was just wondering what the  
18          pattern of those visits is normally.  Is there typically  
19          an annual visit from them or do they come by surprise or  
20          what is it?

21                   **MR. LEVESQUE:**  Stephane Levesque, for the  
22          record.

23                   Those two visits were actually made  
24          surprise visits.  I have no known pattern.  We've only  
25          been regulated by them for the last year-and-a-half or so

1 with the -- I know from experience by when we were  
2 regulated provincially, it was the same. It was random  
3 visits, surprise, so I don't really don't have a pattern.  
4 We just want to ensure that we operate a safe facility all  
5 of the time and we're ready to address them if they show  
6 up.

7 **MEMBER BARNES:** I was going to ask, Mr.  
8 Levesque, since we're now in a new licensing process and  
9 we now have the licence conditions handbook, for you as a  
10 relatively small licensee, how you found this process and  
11 how you look forward to operating under these new  
12 procedures?

13 **MR. LEVESQUE:** Stephane Levesque, for the  
14 record.

15 The positive for us is that if -- we feel  
16 it will allow us more easily to be able to make  
17 improvements to the facility without having to go in front  
18 of the Commission for something that would actually, say,  
19 improve our processes or improve the health of the -- and  
20 the impacts to the public and the environment, so it makes  
21 it easier, less administrative for that.

22 Working with it, it's no different than  
23 working with -- to our licence and procedures, so in that  
24 respect it's the same for us. It's just changes will be  
25 made easier if we have to make improvements.

1           The only negative that we see we quoted in  
2           our presentation, is that we have a concern that the  
3           public won't feel the same amount of involvement with that  
4           in case we have to make a change of request, one that will  
5           only involve staff.

6           So that's why we've basically committed to  
7           making a link on our website to basically give a copy of  
8           those documents as they hopefully are going to be issued  
9           if we're issued a licence, and then any proposed changes  
10          we intend on notifying the public through our website or  
11          in writing if they have the need to -- to show them that  
12          we're proactive and show them any changes we're making to  
13          the facility, where that's kind of a little bit lost if it  
14          wasn't part of a licence hearing for an amendment and so  
15          on and so forth.

16                   **MEMBER BARNES:** Okay, and I just have two  
17                   others questions.

18                  One, if I could just come back to the  
19                  emission reductions and, as the President said, the ALARA  
20                  principle.

21                  Looking back at the data you presented  
22                  here, as low as reasonably achievable, SRBT has actually  
23                  made some pretty dramatic reductions through a variety of  
24                  processes and procedures that you've adopted here.

25                  But do you have any comments, looking back,

1           whether you really considered the ALARA principle and the  
2           way you operated just a few years ago?

3                       **MR. LEVESQUE:**   Stephane Levesque, for the  
4           record.

5                               I think that the way the facility has been  
6           operated since 2005 has been totally changed and revamped.  
7           We're adopting a safety culture and I think that we're now  
8           making every single effort to reduce the emissions, where  
9           before there were other pressures at stake that we were  
10          looking at, but now it's our prime focus.

11                              It's in our company governing principle and  
12          our values and it's something that we adopt every day,  
13          where we want to basically reduce the impact on the public  
14          and the environment and want to make sure that the  
15          public's happy with our operations.

16                              **MEMBER BARNES:**   And in some of the wording  
17          in your submission, you've indicated that you expect lower  
18          values in the future.   I won't go into the details here,  
19          but you have implied that you've got certain plans which  
20          aren't specific, but could you give an indication about  
21          how these curves or graphs might look towards the end of  
22          the next licence period?   Are we at the end of sort of a  
23          point of diminishing returns or do we see a significant  
24          continuing drop of emissions?

25                              **MR. LEVESQUE:**   Stephane Levesque, for the

1 record.

2 Two things are going to happen, one not  
3 necessarily as a result of anything that we're doing now,  
4 by anything we're continuously doing to reduce our  
5 emission. I think I explained when we looked at the  
6 public dose that about in excess of 60 percent of the  
7 public dose is attributable to groundwater consumption.

8 So we know that with what we've done in  
9 emission reduction that that dose will decrease because  
10 just the effect from groundwater will decrease in itself  
11 over time, so that's one thing. But we've made some other  
12 main changes at the facility. We've appointed a  
13 mitigation committee that just looks strictly at reducing  
14 emissions within the facility.

15 We've appointed a human protection  
16 coordinator that basically looks at processes in the areas  
17 where tritium is handled and processed to reduce;  
18 something we didn't have before. We made a commitment  
19 just very recently, a couple of months ago in December, to  
20 further reduce the heating cycles on the heating beds to  
21 see what effect that has and we're going to look at even  
22 reducing that further if that still has an impact.

23 Reducing the volume of release on our  
24 equipment, talking to our competitors, talking to others  
25 that process tritium -- we're not going to stop trying to

1 reduce our emissions because we want to come back and  
2 hopefully show you every year that we were able to reduce  
3 the emissions from the facility because that's what we  
4 want, you want and the public wants.

5 **MEMBER BARNES:** Okay, and finally to the  
6 staff. You, I think, support the request of the five-year  
7 licence but I don't think you made any comment about  
8 whether it should be a mid-term report or any other  
9 variants on that.

10 **MR. ELDER:** Peter Elder, for the record.

11 Because of -- there are two reasons in our  
12 CMD, the original one -- H5. We are recommending that  
13 there be an annual report by SRBT for two reasons. One is  
14 because of the -- if they continue with the unusual  
15 arrangement with cost recovery that you continue to get  
16 routine updates on that one, but also because of the  
17 public interest in the environmental results is that SRBT  
18 come on an annual basis.

19 So rather than a comprehensive mid-term,  
20 our view is the biggest risk out there is the  
21 environmental protection and the monitoring of that one,  
22 that we would come back on that one on an annual basis and  
23 that we could add other topics as required.

24 **MEMBER BARNES:** Okay. Thank you.

25 **THE CHAIRMAN:** Thank you. We're going to a

1 second round. Mr. Graham.

2 **MEMBER GRAHAM:** Yes, I just have one  
3 question on the second round and that refers to page 25 of  
4 the staff's presentation and they refer to the fact that  
5 the CNSC staff observed that SRBT had storage of a large  
6 volume, approximately 65 drums of very low levels of  
7 tritium and submitted a plan to dispose of some of those  
8 drums before the end of 2009 and some in 2010.

9 Could maybe Mr. Levesque give a schedule of  
10 how many of the 65 drums were disposed of in '09 and what  
11 the plans are for '10 and also where they were disposed  
12 to?

13 **MR. LEVESQUE:** Stephane Levesque, for the  
14 record.

15 We currently have 17 drums left on site of  
16 the material. We've disposed in 2010 of 25 drums and  
17 we've disposed of 23 in 2009. We did so by contracting a  
18 waste handler of waste, who picked up the drums of waste  
19 and who basically put them in landfill.

20 **MEMBER GRAHAM:** So the drums were disposed  
21 of in the landfill. Is that in accordance with the way  
22 CNSC -- and that's to CNSC staff as to the proper disposal  
23 method?

24 **MS. ERDMAN:** Ann Erdman.

25 SRBT does not have to obtain approval to

1 dispose of the nuclear substance provided that the nuclear  
2 substances meet the criteria laid out in the Nuclear  
3 Substances and Radiations Regulations. There is a  
4 provision in those regulations for very small quantities  
5 of radioactive materials.

6 We examined SRB's proposal to dispose of  
7 the waste. We looked at the information they provided,  
8 including the numbers, and the numbers that they provided  
9 demonstrated that they met the information set out in the  
10 regulations. Therefore, SRBT could dispose of this not to  
11 a licensed waste handling facility, as they did.

12 **MEMBER GRAHAM:** So the contents of those  
13 barrels, the tritium content in those drums, met the specs  
14 and they were tested and met the specs of CNSC's  
15 requirements?

16 **MS. ERDMAN:** That's correct.

17 **MEMBER GRAHAM:** Can you give us an  
18 indication of the highest concentration of tritium in any  
19 of those drums?

20 **MS. ERDMAN:** Ann Erdman.

21 The information I have from SRBT is that  
22 the average concentration in the drums as they measured  
23 and reported to us is less than .01 mega-becquerels per  
24 gram but perhaps SRBT can confirm that.

25 **MEMBER GRAHAM:** SRBT?

1                   **MR. LEVESQUE:** Yes, Stephane Levesque, for  
2 the record.

3                   If I refer to the Nuclear Substance and  
4 Device Regulations under Schedule 1, column 2, the  
5 activity concentration requirement for disposing of the  
6 waste is 1 mega-becquerel per gram. And the concentration  
7 of the waste that we had was less than 1 percent of that,  
8 so that's correct. It was less than .01 mega-becquerels  
9 per gram.

10                  **MEMBER GRAHAM:** Do you -- and this is to  
11 CNSC staff, just to clarify -- the landfill that this goes  
12 to, do the drums remain intact? Are they drums that carry  
13 any type of life to them or do the drums disintegrate  
14 after time? And is that landfill near a drinking water  
15 supply or the Ottawa River or anything that they leach  
16 through time? CNSC staff.

17                  **MR. ELDER:** In terms of the regulations as  
18 they currently stand is they are below that exemption  
19 quantity and there are two things. There's the one  
20 becquerel per gram. But there's also a total activity in  
21 the package of less than one giga-becquerel. If it's  
22 below those quantities, then there is no regulatory  
23 requirement on the form of the packaging.

24                  **MEMBER GRAHAM:** So they could go into any  
25 landfill, no matter how close it was to drinking water

1 supplies or otherwise. Is that what you're saying?

2 **MR. ELDER:** From our perspective, yes. I  
3 mean, there are some provincial requirements about the  
4 landfills and the design of landfills and what can go into  
5 certain types of landfills.

6 **THE CHAIRMAN:** We've been concentrating on  
7 tritium. Is there any other toxic material in those  
8 drums? Anybody knows what else is in there?

9 **MR. LEVESQUE:** Stephane Levesque, for the  
10 record.

11 No, there wasn't. What's consisted of the  
12 drums is show covers, lab jackets, gloves, not from the  
13 area that processed tritium but from our assembly area.

14 **THE CHAIRMAN:** So it's normal waste and it  
15 goes to a normal waste handling facility?

16 **MR. LEVESQUE:** Stephane Levesque, for the  
17 record.

18 Yes, there's just normal waste garbage, as  
19 is other garbage within our facility.

20 **THE CHAIRMAN:** Thank you.

21 **MEMBER HARVEY:** Merci, Monsieur le  
22 Président.

23 At page 24 of the SRBT -- no, it's a staff  
24 document. Under 310-2, discussion, second paragraph:  
25 "The SRBT plan relies on external responders from the

1       Pembroke Fire Department to deal with an emergency  
2       response. CNSC staff finds this approach reasonable and  
3       CNSC staff has received confirmation from SRBT that the  
4       municipality would respond to a fire."

5                   Has the staff confirmed that information  
6       directly with the municipality and is the staff aware that  
7       the municipality is well-equipped to respond to such fire?

8                   **MR. ELDER:** In this case I don't think  
9       we've formally checked with the fire department. The  
10       hazards from this facility are not that unusual. I mean,  
11       they're unusual but they're not -- from a fire protection  
12       you have to understand that radiation protections --  
13       they're not that complex.

14                   So we've accepted that the licensee has  
15       made the appropriate arrangements with the local fire  
16       department but we have not, at this time, independently  
17       verified that within this licence period.

18                   **MEMBER HARVEY:** You think that should be  
19       done, even if it's not so important, it's not so difficult  
20       to get the information from the municipality?

21                   **MS. ERDMAN:** Ann Erdman.

22                   I would like to carry on. During this  
23       licensing period, as part of the review of the emergency  
24       preparedness plan one of the things we do look for is that  
25       we do get confirmation through the licensee that they have

1 contacted the fire department, and we get that and in  
2 writing for our purposes in the review of the plan.

3 So when we review the plan we want to  
4 ensure that there is an arrangement in place that the  
5 local fire department will respond.

6 **THE CHAIRMAN:** You surely can phone  
7 Pembroke and find out for day two if it's on or not,  
8 right?

9 **MEMBER HARVEY:** It takes two minutes.

10 **THE CHAIRMAN:** Right. Let's do that.

11 **MEMBER HARVEY:** Okay. Another question is,  
12 in the new form of that document we have for each program  
13 the conclusion and recommendations. Can we assume that  
14 all the recommendations that appear in the document become  
15 obligations after that. When the Commission accepts,  
16 approves the report and delivers the licence, are all  
17 those recommendations obligations or conditions?

18 **MR. ELDER:** What the intent was, and this  
19 is why we've structured the licence to match the CMD, is  
20 that you should be able to do the match between the  
21 recommendations and the licence conditions, yes.

22 **MEMBER HARVEY:** That's the case.

23 **MR. ELDER:** So we'll go through and confirm  
24 all of them, but that certainly is the intent; it's those  
25 recommendation sections reflect what's in either the

1 licence or in the licence handbook.

2 **MEMBER HARVEY:** Okay. My last question,  
3 page 31, same document, that's public information.

4 Well, I won't read all that. Just to say  
5 that CNSC staff is proposing a licence condition to be  
6 added that requires SRBT to develop and implement a public  
7 disclosure approach as part of its PIP. Have you received  
8 a request for that? What is the base of such condition  
9 and is it really needed?

10 **MR. ELDER:** The approach that we've done is  
11 similar to the approach to public disclosure that we've  
12 been looking at with AECL and certainly the power  
13 reactors. And given the nature of -- given the amount of  
14 public interest in this facility, we think a formalized  
15 approach is necessary.

16 SRBT, as they explained, has a lot of  
17 information on their website. What this licence condition  
18 essentially would do is just tell them to maintain that,  
19 to also go back in say the formal process for reporting to  
20 stakeholders. What we saw that was missing from the  
21 current program is that they would have certain guidelines  
22 on how they inform the public of events at the facility.

23 So we know they're doing it, but some of it  
24 is through a quarterly meeting to the council. We think  
25 that there may be information that the public wants in a

1 much more timely basis. And we would like to see  
2 guidelines on how they will inform the public about  
3 advancing those facilities that we could then monitor them  
4 against. And those guidelines are based on conversations  
5 with the stakeholders in the community.

6 So we want to make sure there's a formal  
7 program that responds to the needs of the community and  
8 again it's like the approach that we've taken with other  
9 facilities of making sure that routine information is  
10 available on the website. SRBT is already doing that also  
11 but when it comes to non-routine events, it's that there  
12 is a process that is followed consistently so that we can  
13 be sure that the public will get information in a  
14 consistent and timely fashion.

15 **MEMBER HARVEY:** Is it something that will  
16 require more efforts, would cost more than what is  
17 currently done?

18 **MR. ELDER:** If they are -- no, it's -- from  
19 our view, it's just formalizing what they are currently  
20 doing and having some rules around it so that, if you have  
21 a major event, you don't wait until your next quarterly  
22 update to the Commission, to the town council, to do it  
23 but you are more proactive.

24 We believe that they are already doing  
25 this, but there's nothing in the process that tells them -

1 - gives rules on how they do that, and we're just looking  
2 to say, "Develop some rules that really codify your  
3 current practice."

4 **MEMBER HARVEY:** I asked the question  
5 because I was reading the letter we received from  
6 concerned citizens, and that point was not -- I don't see  
7 there was anything on that point in the letter.

8 **MR. ELDER:** It's not something that we  
9 developed based just on this facility but also looking at,  
10 in general, how we would like our licensees to be --  
11 disseminate information to the public.

12 Again, as I say, SRBT has already been  
13 quite active in this area. The idea of the licence  
14 condition is to make sure that they continue to do that  
15 and that we have some regulatory power to force them to  
16 continue what they are currently doing.

17 **THE CHAIRMAN:** Just for clarity, so for  
18 example, the well data, the environmental impact data, all  
19 those things will be put on our website?

20 **MR. LEVESQUE:** Stephane Levesque, for the  
21 record.

22 Yes, they currently are. All our well data  
23 is updated regularly and individuals who actually own the  
24 wells are provided a letter shortly after we receive the  
25 report from the third party of what the concentrations

1 are.

2 **THE CHAIRMAN:** Thank you.

3 Mr. Tolgyesi.

4 **MEMBER TOLGYESI:** Yes, merci.

5 Tell me, on the organizational chart you  
6 said it's 18 employees. How many of these employees are  
7 engineers or professionals or technicians by training  
8 opposing to by job description or position?

9 **MR. LEVESQUE:** Stephane Levesque, for the  
10 record.

11 The operation of our facility is very  
12 specialized in the type of products that we manufacture  
13 and the experience of our staff, the staff has all been  
14 trained on site -- again, I would like to remind that the  
15 average experience is 12 years -- has all been trained on  
16 site.

17 We have a number of individuals that have  
18 degrees and training in various fields but mostly people  
19 have been trained on site to be able to perform those  
20 positions.

21 **MR. TOLGYESI:** You said there were  
22 professionals. Could you give me an example?

23 **MR. LEVEQUE:** Sorry, I'm not sure I  
24 understand the question, I'm sorry.

25 **MR. TOLGYESI:** You said that you have --

1 mostly the employees are trained on the site. That's what  
2 you're saying, but you have some of them who are some  
3 professional engineers or technicians from college or from  
4 university, no?

5 **MR. LEVESQUE:** Stephane Levesque, for the  
6 record.

7 When we performed the organizational study  
8 in late 2007 as part of the current licensing -- and all  
9 the staff is still in place as they were in 2007 -- all of  
10 that information was included in that. I don't have it at  
11 the tip of my finger right now, but their level of  
12 education was in it, their level of experience and  
13 basically now we've added a year and a half of experience  
14 onto what they had.

15 So all the information and a lot of the  
16 things we are discussing today on the organizational chart  
17 and responsibility for certain programs was covered as  
18 part of the last licensing hearing and in the  
19 organizational study, and I can provide an overview of  
20 that for day two if you'd like.

21 **MR. TOLGYESI:** Okay, my last question is in  
22 the pages 8 and 9 of 44. I was trying to compare, you  
23 know, you are registered ISO 9001. And when they did the  
24 audit, there are some findings and nonconformities, which  
25 I think it's kind of corrective actions, compared to

1 opportunities to improve.

2 And I'm looking at what they find and  
3 what you are saying that you find in your internal audits  
4 in 2009 and 2008. You are -- I mean, much more things  
5 that you are finding as they did because you found  
6 everything, you improved it or you are much better off  
7 than they are in finding things to improve.

8 What's the correlation between it? It is  
9 or, if it is, what's the correlation between findings of  
10 that you were doing by internal audits and by this BSI  
11 Management Systems ISO audit?

12 **MR. LEVESQUE:** Stephane Levesque, for the  
13 record.

14 I think that the internal auditor that we  
15 have is actually employee number one for the facility, so  
16 has been hired for the facility since day one. They've  
17 performed a lot of processes at the facility. They're  
18 supported by another individual who does audits. They  
19 have knowledge of every process and that makes a big  
20 difference when you basically audit a process. They can  
21 look at it from a different point of view.

22 But we think that what the individual is  
23 finding, which is the quality manager, is looking at  
24 audits that are very detailed of a specific segment of our  
25 operation in one safety area over a few days or a week

1 while the audit by our registrar is done usually over two  
2 days and it gives an overview of basically small segments  
3 of our operation here and there, where the other audit  
4 performed internally is much more detailed and we're hard  
5 on ourselves because we want to find ways to improve and  
6 to basically be a better company.

7 **MEMBER HARVEY:** And what's the training for  
8 your auditor? You were saying that's employee number one?  
9 He has all this knowledge by experience or he has also  
10 completed kind of training as an auditor?

11 **MR. LEVESQUE:** Yeah, she's a -- it's a  
12 combination of both. She essentially used to work on  
13 various aspects of our -- in production and  
14 administration, so she's gained experience that way but  
15 she's also been formally trained by our registrar for  
16 auditing purposes.

17 **THE CHAIRMAN:** Thank you.

18 Dr. Barriault?

19 **MEMBER BARRIAULT:** Thank you.

20 On the issue of occupational health and  
21 safety that Dr. Barnes touched on earlier, you had an  
22 assurance of voluntary compliance issued in 2008. What  
23 was the nature of this, I guess, document, do you recall?

24 **MR. LEVESQUE:** Stephane Levesque, for the  
25 record.

1                   The one main thing I remember from the  
2 document was to complete the noise survey based on the  
3 findings that they found and to basically bring us up to  
4 compliance with the Canada Labour Code as opposed to the  
5 Ontario code. So a lot of the activities that we did were  
6 those new procedures that we developed for workplace  
7 safety and hazard identification, including the hazard  
8 prevention program. So that was essentially the nature of  
9 the AVC.

10                   **MEMBER BARRIAULT:** And your answer, was it  
11 including also radiation protection or was it strictly  
12 other physical hazards?

13                   **MR. LEVESQUE:** It includes all hazards,  
14 including radiation and another thing I omitted to mention  
15 is what we had to do because we changed from provincial to  
16 federal. One part of the AVC was to ensure that  
17 supervisory staff and members of the health and safety  
18 committee are aware there are new responsibilities under  
19 the Canada Labour Code, so we had to get external training  
20 on those people to be able to be in line with the Labour  
21 Code and that was part of the AVC as well.

22                   **MEMBER BARRIAULT:** Thank you.

23                   My next question is to CNSC staff really.  
24 Have you been monitoring the occupational health and  
25 safety committee minutes at all to see if there's any

1 recurrent issues?

2 **MS. ERDMAN:** Ann Erdman.

3 We don't routinely get the minutes of the  
4 meetings from SRB. However, during our inspections at the  
5 facility -- I was there late last fall -- I did look at  
6 their meetings minutes, a snapshot of them during the time  
7 I'm there, to see if there's any -- what the significant  
8 items were, whether there's anything that would impact or  
9 we should look at ourselves, and I didn't see any at that  
10 point in time.

11 **MEMBER BARRIAULT:** I'm sure that you could  
12 get copies of the minutes, I guess, on a regular basis if  
13 you so desired. The reason I'm asking this is because  
14 these issues have a tendency to fall in the cracks. You  
15 know, we say "Well, it's not really our responsibility,  
16 it's somebody else's", but in reality it is up to us to at  
17 least monitor and make sure that things are being done.

18 I guess the issue is not who does it but  
19 that it is being done. So it's one of the things that I  
20 personally would like to see more of really, on the  
21 occupational and safety side of it.

22 That's all, Mr. Chairman, thank you.

23 **THE CHAIRMAN:** Let me try to piggyback on  
24 this visual. Is your staff unionized?

25 **MR. LEVESQUE:** Stephane Levesque, for the

1 record.

2 No.

3 **THE CHAIRMAN:** So somewhere in the  
4 presentation, I think on both presentations, people talk  
5 about safety culture and we have a pretty systematic -- we  
6 at CNSC have a pretty systematic kind of a way of  
7 assessing safety culture and one dimension, one important  
8 dimension, is whether there's a freedom to point out areas  
9 for improvement up the line without fear of retaliation.

10 So I don't know how CNSC staff made this  
11 assertion that there's pretty good safety culture in SRBT  
12 without looking at minutes and interviewing staff to make  
13 sure that actually a problem can be raised. So I'd like  
14 the staff to comment first whether you apply the safety  
15 culture methodology; and SRBT, what you do about that.

16 **MS. ERDMAN:** Ann Erdman.

17 During my recent inspection in November, I  
18 took a list of questions to ask at the facility, including  
19 asking not only management but also the people who do the  
20 work if they -- various questions regarding their --  
21 whether they could make comments on improvements, whether  
22 there was any fear in terms of going to management, to  
23 bringing items up, and I got very positive response from  
24 the staff that I talked to, that this was a definite  
25 improvement in the organization and they saw that as a

1 positive.

2 In addition, when I was there I looked at  
3 whether safety was integrated into the other activities in  
4 the organization and I also looked at whether they were a  
5 learning organization. I had a various list of questions.  
6 I didn't look at the methodology that you're referring to  
7 -- I didn't use that methodology, being that they're a  
8 very small facility and we felt that we could do it this  
9 other approach but we got some very good information out  
10 of that inspection.

11 **THE CHAIRMAN:** SRBT, would you like to  
12 comment?

13 **MR. LEVESQUE:** Stephane Levesque, for the  
14 record.

15 I think that's the whole part of the change  
16 behind SBR Technologies and why the emissions have reduced  
17 and we made so many improvements, because a couple of  
18 years ago, obviously as a wake-up call from losing the  
19 processing licence, we've really empowered the staff to  
20 come out with ways to improve the processes, the facility  
21 or new ways to do things.

22 The staff's really given the freedom to be  
23 able to come forward and is actually compensated for  
24 coming out with those improvements. It's something that  
25 we felt had to start at the top. Senior management,

1 General Manager Ross and myself, drive it, but we  
2 basically commend anybody who comes out with any  
3 improvements. That's something we're continuing to do and  
4 I think it's showing some results.

5 **THE CHAIRMAN:** Thank you.

6 Dr. McDill?

7 **MEMBER McDILL:** I think there is some  
8 concern in the community about the decommissioning plan  
9 and I see that in 9.4 -- section 9.4 of SRB's document  
10 they say they are going to have an increase in production  
11 output and process between 10 and 15 per cent within the  
12 five-year licence term. Will that contribute to an  
13 increase in profit which will give an extra 50 cents of  
14 every dollar to the decommissioning fund?

15 **MR. LEVESQUE:** Stephane Levesque, for the  
16 record.

17 That's a commitment that we made and I  
18 believe it's a licence condition that's to remain in the  
19 booklet. So yeah, any increase in profit would obviously  
20 go towards the decommissioning fund because we also want  
21 to pay it as fast as possible.

22 **MEMBER McDILL:** And does staff feel that  
23 that's still a reasonable pace at which to build the  
24 decommissioning fund?

25 **MR. ELDER:** When we looked at it, it said

1 none of the factors that went into the original Commission  
2 decision to accept that schedule have changed since it was  
3 put in place.

4 Obviously, when we do the review of the  
5 financial guarantee and the decommissioning plan in 2011,  
6 we will be revisiting that schedule as well and make sure  
7 it makes sense in terms of if there's a change in the  
8 amount they have to build so that the length of time to  
9 build the amount is not probably -- well, essentially it  
10 does not extend.

11 So, you know, we're satisfied that all the  
12 conditions are the same that were originally put in place  
13 but there will be a thorough review of everything when we  
14 have a new decommissioning plan to base the cost  
15 assessments on.

16 **MEMBER McDILL:** And at the end of the  
17 proposed five-year licence term, that fund should be very  
18 close or fully populated?

19 **MR. ELDER:** Given the current payments, it  
20 should be -- the current schedule, I believe, ends in  
21 2014. So it should be done within the current licence  
22 period, barring any changes to the amount.

23 **MEMBER McDILL:** That's why I said close to.  
24 Thank you, Mr. President.

25 **THE CHAIRMAN:** Thank you.

1 Dr. Barnes?

2 **MEMBER BARNES:** No further questions.

3 **THE CHAIRMAN:** Thank you.

4 I have only one question. We're coming  
5 back to the ALARA principle and the kind of improvement  
6 that you are still looking forward to do, I really would  
7 like for Day Two, if it's possible, really for you to tell  
8 us what is practical. What can really be done?

9 I'm always looking, as I think somebody  
10 asked before, what's going to be the end result at year  
11 five? So if you get a licence for five years, what is  
12 your expectation in terms of improvement?

13 Now, let me ask you, I don't know if it's  
14 technically feasible. Can one eliminate any emission from  
15 a plant such as yours or processing? In other words, not  
16 emit anything, not release anything, into a closed loop in  
17 which everything gets treated internally and any waste  
18 goes outside the plant.

19 Is it feasible to actually construct this  
20 or it's too expensive, et cetera? What are the next major  
21 improvements that one can do?

22 **MR. LEVESQUE:** Stephane Levesque, for the  
23 record.

24 Obviously, just to make sure that people  
25 are aware, our single largest cost in operating the

1 facility is the purchase of tritium. So it's really a  
2 double incentive to be able to want to reduce the  
3 emissions and that's something that we want to continue to  
4 do for our own sake.

5 In our research and talking to other  
6 facilities that process tritium and what we've done, we  
7 haven't found ways of effectively reducing emissions to  
8 zero. If there are any, they are not affordable to us and  
9 we are not aware of them.

10 We're looking at what any other facility is  
11 doing, from reactors to other processing facility who make  
12 tritium light, and anything that others have done we're  
13 trying to adopt, if we haven't already done it in trying  
14 to improve on what we further do. But I'm not aware of  
15 any of that would be available to us.

16 **THE CHAIRMAN:** It still would be useful  
17 about what practically can you do and presumably you can  
18 actually come up with some targets for the future that  
19 you'd strive to achieve.

20 Staff, do you think this is a reasonable  
21 undertaking?

22 **MR. ELDER:** We'll look at it. We mentioned  
23 earlier that there's some tritium studies we're doing.  
24 One of those studies is to look at the technology that is  
25 available. So that one will be one of the studies that's

1 available prior to Day Two.

2 Obviously, we've seen the draft of that  
3 report and we think they're putting in place most of the  
4 currently available technologies already being used but  
5 there may be something in there that would lead to some  
6 further reductions in the amount of tritium.

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

8 Anybody else? Mr. Tolgyesi?

9 **MEMBER TOLGYESI:** Mr. Levesque, you were  
10 saying that your staff is in place average at least 12  
11 years, even more, and everybody who is working there it's  
12 the same person for the last 10, 12, 14 years. And what  
13 you are saying is suddenly since 2007, 2008, it is a kind  
14 of improvement.

15 What's happened? It's the same people, the  
16 same place, doing the same job and suddenly we see a kind  
17 of improvement. What's the trigger? What do you do  
18 differently or why you do differently?

19 **MR. LEVESQUE:** Stephane Levesque, for the  
20 record.

21 To be perfectly blunt, the trigger was the  
22 loss of the licence. Obviously losing the ability to  
23 process made us realize what's really important and it  
24 totally changed the focus of the company where it became  
25 to -- not that we've lost our other focus, which is

1 obviously to be profitable and having customer  
2 satisfaction, but we do realize the importance of having a  
3 process and a licence. And for that you have to keep  
4 reducing emissions and be open with the public and find  
5 ways.

6 So we basically changed our focus and  
7 that's why we changed our company values and governing  
8 principles to basically reflect that in what we're doing.  
9 But the staff that we have were appointed and some of them  
10 in new positions over the last few years, which is before  
11 those changes had been implemented, but just before those  
12 changes were implemented.

13 I think what you're seeing now is the  
14 results of this new team that was constructed, I guess,  
15 while we lost the processing licence because during that  
16 time we lost a number of people. We've let go a few  
17 people and now we have a new team of people and you're  
18 seeing the results from the team of people that is  
19 basically operating now, not necessarily the same people  
20 in the same positions that were there in 2000 all the way  
21 to 2005.

22 This team was developed between 2006 and  
23 '07 when we started having problems and when we lost the  
24 processing licence.

25 **THE CHAIRMAN:** Anybody else? Any other

1 question?

2 Well, just to follow up, I can't resist but  
3 assuming that this Commission should take some credit for  
4 the regulatory oversight to encourage you to improve your  
5 facility. Right.

6 Anyhow, this is the end of this hearing.  
7 The next chapter will be in May and so we'll close now and  
8 reconvene with the OPG hearing at 1:15.

9 **MR. LEBLANC:** That's fine. We're scheduled  
10 for 1:00, but we'll go 15 minutes later because -- 1:30  
11 was the start of this?

12 **THE CHAIRMAN:** Actually ---

13 **MR. LEBLANC:** It's supposed to be 1:00, I  
14 think.

15 **THE CHAIRMAN:** It says 1:30.

16 **MR. LEBLANC:** Yeah, I may have goofed. It  
17 may 1:30. Let me check. Let's aim for 1:30.

18 **THE CHAIRMAN:** Let's say 1:30. We can give  
19 everybody a longer lunch here. Thank you very much.

20 Okay. Anything else you want to add, Mr.  
21 Secretary?

22 **MR. LEBLANC:** I'll just add that the  
23 hearing is to be continued on May 19<sup>th</sup> here in the CNSC  
24 offices. That will be Day Two. The public is invited to  
25 participate either by oral presentation or written

1 submission on hearing Day Two.

2 Persons who wish to intervene on that day  
3 must file their submissions by April 19<sup>th</sup>, 2010.

4 The hearing is now adjourned to May 19,  
5 2010.

6  
7 --- Upon recessing at 12:36 p.m. /

8 L'audience est suspendue à 12h36

9 --- Upon resuming at 1:34 p.m. /

10 L'audience est reprise à 13h34

11

12 **THE CHAIRMAN:** Good afternoon and welcome  
13 to this proceeding of the Canadian Nuclear Safety  
14 Commission.

15 Mon nom est Michael Binder. Je suis le  
16 président de la Commission canadienne de sûreté nucléaire.

17 Je souhaite la bienvenue aux gens ici  
18 présent and to all of you who are joining us through  
19 webcasting, welcome.

20 I'd like to begin by introducing the  
21 Members of the Commission that are with us here today; on  
22 my right, Dr. Moyra McDill and Dr. Christopher Barnes; on  
23 my left, Mr. Alan Graham, M. André Harvey, Mr. Don  
24 Tolgyesi and Dr. Ronald Barriault.

25 In addition, we have Ms. Kelly McGee, the

1       Assistant Secretary of the Commission, and Ms. Lisa  
2       Thiele, Senior Counsel to the Commission, which are  
3       joining us here today.

4                       So the next item on the agenda is the  
5       application by Ontario Power Generation for the renewal of  
6       the Pickering Nuclear Generating Station A operating  
7       licence.

8