--- Upon resuming at 1:45 p.m.

Zircatec Precision Industries Inc.:
Application by Zircatec Precision Industries Inc. for renewal of Class IB Nuclear fuel Facility Operating Licence for its facility In Port Hope, Ontario

THE CHAIRPERSON: The next item on the agenda today is Hearing Day-1 on the matter of the application by Zircatec Precision Industries Inc. for the renewal of Class 1B Nuclear Fuel Facility Operating Licence for its facility in Port Hope, Ontario.

MR. LEBLANC: This is Day-1 of the public hearing. The Notice of Public Hearing 2006-H-10 was published on July 31, 2006.

The submissions from the licensee and CNSC Staff were due on September 1st. CNSC Staff requested an extension to file their submission. A panel of the Commission varied the rules to allow CNSC Staff to file their submissions on September 6th.

September 27th was the deadline for filing of supplementary information. I note that supplementary information has been filed by Zircatec Precision Industries Inc.

Commission Member Document 06-H19.A is confidential and will be discussed in closed session, if necessary, after the public portion of the hearing.

THE CHAIRPERSON: I would like to start the hearing this afternoon by calling on the presentation from Zircatec Precision Industries Inc., as outlined in Commission Member Document 06-H19.1 and 06-H19.1A.

I acknowledge that Mr. Gerry Grandey, President and CEO of Cameco is with us this afternoon. He may wish to speak, but I also understand that Mr. Andrew Oliver, Vice-President of Zircatec will be doing the main presentation and so I will leave it to these gentlemen.

MR. GRANDEY: Well, good afternoon, Madame Chairman and the Members of the Commission and Staff.

My comments earlier this morning were intended to be general and to cover all three of the facilities, but I should say for the record, my name is Gerry Grandey, President and CEO of Cameco.

The only thing I would say, is we acquired Zircatec on the 1st of February of this year. So it is now part of the Cameco group of companies. We are absolutely delighted with that.

One of the challenges that we faced was getting Zircatec integrated into our group of companies and again, back to the comment I made earlier in response

to your question, Madame Chair, about consistency and making sure that culture and one of the issues we deal with in an environmental leadership and safety were the same. Maybe that's my black berry, I don't know.

But in any event, we're absolutely delighted with the transition period that's gone on and the person responsible for that is Andy Oliver, Vice-President of Zircatec and so without further ado I will turn the presentation over to Andy and then Bob Steane on my left is here to answer questions as well.

Thank you.

06-H19.1 / 06-H19.1A

Oral presentation by Zircatec Precision Industries Inc.

MR. OLIVER: Thank you, Gerry. Good afternoon, Madam Chair and Members of the Commission. For the record, my name is Andrew Oliver, Vice-President of Zircatec.

To assist in answering questions and providing additional information, I have with me today, Lloyd Jones, the Past-President of Zircatec, Michael Longinov, Manager of Occupational Health & Radiation Safety, Neil Hamilton, Director of the Port Hope Operations, Monica Oosting, Radiation Safety Officer and Jack Henderson, Fire Consultant.

During the application for the current

licence and again at the Mid-Term Review held in February, 2005, Zircatec Representatives described their commitment to continual improvement as demonstrated by their past performance.

As a new Senior Representative of the company, I am here to not only stand by their commitment, but also committed to further strengthening the organization within Cameco's Safety, Health, Environmental and Quality Management Programs.

The CMD provided to you by your Staff confirms that Zircatec continues to make improvements in vital safety areas. However, we will always continue to strive for excellence in every area of safety.

The CMD also recommended that the amendment of the licence to work with larger amounts of enriched uranium should be addressed through a separate process involving a new environmental assessment.

We will cooperate fully with the CNSC Staff in following this new path to address our licence amendment. We hope that this path can be quickly and clearly defined as well as promptly followed. Having regard for the separate path to a licenced amendment, I will today focus only on the re-licencing of the current activities at Zircatec's Port Hope Facility.

Zircatec has operated a nuclear

manufacturing facility in Port Hope for nearly 50 years. This facility is approximately 100 kilometers east of Toronto and is situated in the southeast part of the Municipality of Port Hope.

Zircatec has a second facility in Cobourg which manufacturers the components that I use in our Port Hope Facility. Zircatec's Port Hope Facility is licenced under the CNSC as a Class "1B" Nuclear Facility where the uranium dioxide is processed to manufacture CANDU fuel bundles.

The Port Hope Facility currently employees approximately 160 employees. This diagram illustrates the steps of the Fuel Bundle Manufacturing Process that is carried out in the Zircatec Port Hope Facility. Uranium dioxide powder is received from the Port Hope Conversion Facility as the zirconium cylinders are received from the Zircatec's Cobourg Facility. The tubes are filled with uranium dioxide side pellets, sealed and assembled into fuel bundles.

The other photo in this slide depicts the uranium dioxide powder in a drum as it is received. The uranium dioxide power is first conditioned and pressed into cylindrical pellets. This is done using a tablet press, the same type of press used to press pills such as aspirin tablets.

The photo in the slide to the lower right shows the pellet press. The press pellets are then sintered at a high temperature in the furnace to turn them into hard ceramics, much like ceramic pottery.

After sintering the pellets are ground into a smooth finish. The ground pellets are then washed, dried and assembled into stacks at the right lengths to fill sub-assembly tubes. The picture in the lower left shows an operator making stacks of pellets to the right length to fill the sub-assembly tubes.

After the stack is loaded into a sub-assembly tube as shown in the upper left photo and then as shown as pictured in the upper right of this slide, the end caps are resistance-welded on to seal the pellets inside each tube. And the load that is in the sub-assembly tubes are now called fuel elements.

The fuel elements are assembled into a fuel bundle by welding zircaloy in place at the two ends of each fuel element. The picture in the bottom left of this slide shows an operator loading the fuel elements into the bundle fixture. The finished bundle elements are subject to final visual and dimensional inspections as depicted in the picture in the bottom right before they are packed for shipment to our customers.

Zircatec’s current licence allows for the

production of up to 125 megagrams of UO2 as pellets contained in fuel bundles during a calendar month, and the handling and registering up to five smallest critical masses, or “SCM”, for low enriched uranium which contains less than five per cent U235.

Zircatec places Health and Safety as one of its priorities. Many years ago, Zircatec developed a strong safety culture that has been consistently built on and reinforced. Having the right culture is the foundation for, and is absolutely essential to, continuing success in this area. This means that every person working at Zircatec must believe that the safety is the most important aspect of their job and are, therefore, thinking about safety before anything else.

For instance, every meeting at Zircatec begins with the safety item. This practice ensures that safety stays in the front of Zircatec employees’ minds.

This chart shows a significant success as a result of our efforts to continually improve. We currently have a “no lost time incident” record of more than three years. The union at Zircatec, the United Steel Workers is also a leader in fostering safe work environments. No union is more committed to ensuring the safety of workers than the steel workers.

Zircatec has an active Joint Health and

Safety Committee with representatives from both management and union. During the current licence period Zircatec implemented an ALARA Committee that has as it's main focus, the reduction of both dose to workers and environmental emissions.

Zircatec has a eliminated PCB's from the facility and the bulk storage of chemicals, for example, acetone from inside to plant. In addition, we have taken advantage of state of the art and technology and upgraded the facility safety systems. For instance, our air extractions, sprinkler and in-plant air monitoring systems were upgraded during the current licence period.

Zircatec also implemented an indoor hydrogen/oxygen detection system in the area facilities. Of course during the licence period, we initiated independent safety orders of our facility and completed third party reviews which will be discussed further in this presentation.

Zircatec has a comprehensive radiation protection program that details the responsibility for providing a workplace that protects employees, contractors and visitors from hazards including those associated with radioactive materials.

The ALARA principal forms the basis of much of this program. Over the past five-year licence period

Zircatec has ensured new technology is used for radiation monitoring. To this end, Zircatec has installed a new criticality alarm system, hand and foot monitors, portal monitors, stack sampling equipment, an in-plant air sampling equipment.

Also, early in 2003, Zircatec developed an internal dosimetry program that was approved by CNSC Staff. This was done with the full cooperation and support of the union. This program is based on urine samples that are submitted by employees on a bi-weekly basis. Zircatec uses this data to calculate an internal dose for each employee that is individual and specific. Individual internal dose information is carefully tracked and is used as one of the two components to calculate each employees effective dose.

The other component is the externally measured whole body dose. This new component of internal dose is a significant enhancement to our comprehensive radiation protection program that is reported in quarterly and annual compliance reports to the CNSC.

This graph shows the trend for the externally measured component, the external dose. They have been extrapolated for all of 2006 based on actual data for the first six months of the year and then projected for the whole year, based on the ratio of actual

data from 2005.

As you can see from this slide, Zircatec's continual improvement efforts have resulted in a reducing trend over the five-year licence period for external dose for its nuclear energy workers.

You will note in this and several subsequent charts that despite the general trend down, 2006 data are projected to be higher than 2005 data. These data for 2006 are higher than 2005 due to increased production levels and equipment limitations that required high over-time levels.

We are addressing this through having operators to reduce over-time and upgrading mechanical systems that will be part of our new LVRF line to be discussed in the future as part of the planned licence amendment noted earlier.

This graph shows the improvement we have experienced as a result of our efforts to reduce internal exposure to our employees since 2003 which is when Zircatec's internal dose program began.

Again the data for the second half of 2006 have been projected using data for the first half of 2006 and the improving trend is again evidenced. This graph shows the average annual effective dose of nuclear energy to workers at Zircatec.

As previously mentioned, the effective dose is calculated by having the external and internal dose. The reducing trend is directly related to the reducing trends shown in the previous two slides.

For decades the Zircatec Port Hope Facility has been licenced to manufactured fuels containing enriched uranium. Over that time Zircatec has manufactured many different types of fuels of varying enrichments. This has been done safely, without compromising the health and safety of our people or members of the public and without harm to the environment. Our methods of handling materials in a safe and environmentally sensitive manner are established, robust and proven over our many years of licenced activity.

As previously mentioned, Zircatec has also installed a state-of-the-art criticality alarm system known as “CIDAS” shown in the picture.

To ensure protection in the environment, Zircatec has a comprehensive environmental protection program that consists pollution source abatement and an environmental monitoring program. This program of Zircatec’s includes sampling of air and water missions, high-volume air sampling of ambient air, both surface and ground water monitoring as well as soil and vegetation sampling.

In order to determine the potential affects of Zircatec's emissions on plants and animals, Zircatec has had an ecological risk assessment completed on non-human biota which has been submitted to and accepted by the CNSC.

This assessment determined that the amount of uranium dioxide released from Zircatec's Port Hope Facility through air and water does not pose significant risk to the environment.

This graph depicts the total yearly uranium emissions from our liquid affluent during the current licence period. Data for the first half of 2006 have again been used to estimate the projected annual emissions and an improving trend is again evident.

This graph shows the total yearly uranium emissions for all of our 11 stacks as well as other exhaust emissions. Again data for 2006 have been estimated for the second half of the year to give the projected annual emissions, and again there is improving trend over the five-year period.

Additionally, I would like you to note in this graph that the emissions reported here are a combination of stack emissions and fugitive emissions. Stack emissions are more precisely measured and have been an historic measure in regulatory reports.

Fugitive emissions can only be estimated based on plant air quality and ventilation rates. The combination is reported here and will be in the future to address stakeholder interest.

Derived release limits established the maximum amount of emissions that ensures the safety of the public. Of course, the uranium air and liquid emissions are well below these release limits. It continues to be Zircatec's goal to reduce emissions consistent with the ALARA principle, that is as low as reasonably achievable.

An additional ALARA of control to the derived release limits is in the form of action levels. Action levels are approved by CNSC Staff and are set on a daily, weekly and quarterly basis for early identification and interventions of environmental safety systems.

They play an essential role in continued improvement efforts. As part of Zircatec's commitment to protect the community and the environment, soil and vegetation samples are collected and analyzed from 18 locations surrounding the Port Hope facility. This was performed every three years until 2003 and since that time, on our initiative, it has been performed on an annual basis.

Most recently the soil samples ranged from three to 22ppm uranium. All of the results were well

below the 300ppm level set in the recently issued draft guideline from the Canadian Council of the Ministry of the Environment.

In addition, the results of this sampling indicate that there is no accumulation of uranium in the soil. The Ganaraska Region Conservation Authority known as the “GRCA” is responsible for water management in a region that includes the Zircatec Port Hope facility.

The GRCA has undertaken a study to determine the potential impact of areas surrounding a tributary of a creek that runs through east section of Zircatec’s property. The study is being reviewed and is not yet complete. However, early indications are Zircatec’s facility is above the floodplain.

The GRCA under a recommendation from the Ministry of Natural Resources is also assessing the creek floodplain for the probable maximum flood. Again, preliminary indications are that the facility is situated above the extreme flood level.

It is Zircatec’s policy that safety and quality come first. There is a natural alliance between these two areas. Zircatec is committed to providing regulatory confidence in the safety of its nuclear facility. Zircatec also has a quality assurance program and recently created a nuclear facility quality assurance

manual to satisfy current CNSC expectations.

Zircatec's performance in protecting the public from radiation has resulted in individual doses well below the regulatory limit of 1/mSv/yr. During the third quarter of 2002, at our own initiative, Zircatec deployed environmental dosimeters around the perimeter of the facility to collect gamma exposure data. The data indicated that gamma exposure of the critical receptor was not an ALARA level, therefore, an initiative was undertaken to investigate possible options to lower the gamma exposure.

In 2005, the chosen option was construction of an engineered soil berm shown in this photo. This reduced exposure levels at the monitoring location for the critical receptor to background levels.

In recent years increasing attention has been placed on fire safety. Through our continued improvement efforts specific to fire safety, Zircatec has been successful in having our facility rated as a Group "F", Division 3 rating under the Building Code Occupancy Hazard rating, which is the lowest fire rating for an industrial facility.

This is largely due to the ongoing efforts to minimize fire loading, the new sprinkler system, improvements made to items identified through fire and

building code audits and the efforts made to decrease the amount of hazardous materials on-site at a facility that manufactures non-flammable products.

CNSC proposed a number of new licence conditions, specifically with respect to fire protection. An example of this is the NFPA-801 standard.

Although we endorse this as an objective, we have been held to a different standards than the current licence. We want to be sure that at the time the new licence becomes effective, we are not inadvertently placed into a state of non-compliance because perhaps a transition period was necessary but not yet provided.

Therefore, we are asking for a period to determine what the new licence conditions will require and then a phase-in period for compliance.

Zircatec believes that it is appropriate in this situation to engage in further dialogue with CNSC Staff with a view to obtaining clarification on some of the proposed licence conditions in advance of the Day-2 Hearing.

Some of the most recent initiatives in relation to fire protection are the installation of an addressable fire panel with voice and two-stage tone capabilities. This system includes alarm post stations at exit doors all throughout the plant as well as strobe

lights in noisy areas.

We have also installed two additional fire hydrants on the north side of the site with increased water capacity to meet firefighting requirements for this area.

Additionally, we are in the midst of implementing an engineered fire water containment system in areas containing hazardous materials. Although this project is well under way, it will not be finished until the summer of 2007.

“Emergency Preparedness and Response” has also been a major focus of time and resources during this licence period. During the last two years Zircatec has worked diligently with the Port Hope Fire Department to understand and address each others concerns.

With the implementation of various procedures and equipment, Zircatec Staff and the Director of Emergency Services for the Municipality of Port Hope’s Fire Department, were able to agree to a pre-incident plan for the facility earlier this year. This plan details the background of the operations profile of the Port Hope Fire Department and the response of Zircatec’s personnel during an emergency incident. This plan was practised during an emergency exercise conducted in the summer of this year which was observed by CNSC Staff, the Director of the Port

Hope Fire Department as well as the Deputy Fire Chief and Zircatec Staff. These photo's are from the exercise.

The exercise was considered a success, however, opportunities for improvement were identified. Some of these improvements have been made and others are ongoing.

In addition to joint exercises with the Port Hope Fire Department, Zircatec has regular drills with our emergency response team as well as our employees. Although Zircatec is confident that we are doing the right things, we use third party reviews for verification purposes. Not only do we learn from the experience of others, but also this is a way for us to maintain the leading edge in technology as well as learn about the approach being used by others in the industrial and engineering field.

Third party assessments have been carried out on the critical safety systems for fire safety, the liquid hydrogen facility, the hydrogen and monitoring systems, the local dust extraction system, as well as the health physics program.

Improvements have been made in all these areas as a result of the reviews conducted. To address decommissioning of the facility and the land renewal of the licence, an independent consultant reviewed the

facility in December, 2001.

A plan based on available technology was developed and determined that in order to place the facility into a state that would allow the removal of the licence, an estimated three million dollars would be required. This estimate must be updated on a regular basis to reflect the conceptual plan, changes to the facility and current decommissioning practices.

Zircatec is in the process of having this estimate updated and we are anticipating there will be changes to the decommissioning cost. Zircatec will work with the CNSC Staff to update the irrevocable letter of credit to address the extra costs.

In response to the Commission views expressed at the midterm licence review, Zircatec developed a public information program. This program is lead by a committee that meets on a quarterly basis to review and grade initiatives and material that were provided to the public during the quarter. The committee than develops new initiatives for the upcoming quarter.

Some of these have included an information day for the public to provide information on the general operations of the facility as well as the changes that would occur during SEU processing.

Zircatec specialists, including local union

representatives, answered questions, performed demonstration and provided, as well as collected, information from the public.

In December 2005 Zircatec personnel attended a meeting with a Port Hope based special interest group called “FARE” to explain what we do at our Port Hope Facility and to answer their questions.

Other events included the fall fair, trade shows and Cameco’s Open House where Zircatec Staff were on hand to talk with the public and answer questions.

Zircatec has also participated in the community forums in Port Hope held by Cameco. These forums provide an avenue for the public to first have input on the type of information they would like to receive and then attend a later forum on that specific topic.

After the first forum that gathered topics of interest, the other forums have focused on health studies, economic impact and the CSNC’s roles and responsibilities.

In addition to providing information to the public, we also participate in community involvement functions. Zircatec has a community involvement committee consisting of union and salary employees which manages and allocates funds from the company. This committee also

organizes fundraisers and engages employees to become more involved in charitable organizations within the community, including those listed on this slide.

In conclusion, looking to the future, although we are very proud of our safety culture, we will continue to enhance this culture. The acquisition of control by Cameco is providing additional avenues to enhance safety programs to corporate wide safety programs.

Zircatec is embracing the systematic approach to training. Therefore, we will be implementing strategies to incorporate our current training programs to align with this approach.

We are planning to register for ISO 14001 environmental management system certification. Zircatec will continue the public information program for ongoing community outreach.

Although not relevant to renewing the current licence without amendment, and as previously mentioned, Zircatec will be undergoing an environmental assessment to begin a new CANFLEX/SEU production line.

Our facility performance with respect to worker, public and environmental protection is regularly reviewed by Commission Staff. In the past, present and in the future Zircatec has and will continue to operate in accordance with all regulatory requirements as defined by

Acts, Regulations, licence and other supporting documents.

And on the basis of our past performance and commitment to future performance, Zircatec respectfully requests a five-year licence renewal.

Thank you for your attention.

THE CHAIRPERSON: Thank you very much.

Before opening the floor for questions, I would like to turn then to the presentation by CNSC Staff.

I would then like to turn to Mr. Barclay Howden, Director General of the Directorate of Nuclear Cycle and Facilities Regulation. This is noted in CMD 06-H19, 06-H19A.

Mr. Howden, you have the floor, sir.

06-H19

Oral presentation by CNSC staff

MR. HOWDEN: Thank you. Good afternoon, Madam Chair and members of the Commission.

For the record, my name is Barclay Howden. With me today, are Mr. Henry Rabski, Director, Mr. J. Jaferi, Project Officer in the Processing and Research Facilities Division, as well as all the other members of our licensing team for this facility.

CNSC Staff has reviewed the operation of the facility and the licensee’s application to renew its Class 1B Nuclear Fuel Facility Operating Licence that will

expire on February 28th, 2007.

Based on this review, CNSC Staff has formed a position on the application which is documented in CMD 06-H19. The position includes a recommendation that the Commission renew the operating licence for another five-year term.

I will now pass the presentation over to Mr. Rabski first and then to Mr. Jaferi who will provide you with CNSC Staff's recommendations for licence renewal.

MR. RABSKI: Good afternoon, Madam Chair, Members of the Commission. For the record, my name is Henry Rabski.

Our presentation this afternoon, has six parts. I will first provide an overview of the facility, followed by a discussion of CNSC Staff's review of Zircatec's Licence Renewal Application. Then Mr. Jaferi will highlight the licensees safety programs and performance in various safety areas along with updates on follow-up actions from the January, 2002 Licence Renewal and February, 2005 Mid-Term Performance Review public hearings.

Following that, other relevant information to this licence renewal, including the changes proposed to the current licence conditions, will be discussed by Staff.

Finally, to end our presentation, Mr. Jaferi will present CNSC Staff's conclusions and recommendations for the Licence Renewal. Throughout our presentation this afternoon, we will refer to the licensee, "Zircatec Precision Industries Inc." as simply "Zircatec."

I will now start with an overview of the facility. Zircatec's facility is located at 200 Dorset Street East in the Municipality of Port Hope, Ontario, approximately 100 kilometers east of Toronto.

Zircatec operates the Port Hope facility for the manufacturer of nuclear reactor fuel bundles from two basic materials: uranium dioxide power and zirconium tubes.

Zircatec receives natural and depleted uranium dioxide power from Cameco's Port Hope Conversion facility and zirconium tubes from its non-nuclear plant located in Cobourg, Ontario.

In addition, an enriched uranium dioxide powder containing less than five per cent uranium 235 isotope is received from a foreign supplier. The finished fuel bundles are shipped to Canadian nuclear power plants.

Occasionally, some fuel bundles are also shipped to international customers under a separate export licence obtained from the Canadian Nuclear Safety

Commission.

The facility is licenced to produce up to 125 megagrams per month of uranium dioxide pellets contained in fuel bundles and to possess up to five small critical masses of enriched uranium dioxide powder containing less than five per cent uranium 235 isotope. The smallest critical mass is the amount of enriched uranium that it placed in a sphere shape under water would cause criticality.

The risks at this facility are mainly due to conventional industrial hazards associated with a manufacturing plant as well as radiological hazards associated with the uranium dioxides that are processed here.

Zircatec's safety analysis report demonstrates that the overall risk to the workers, the environment and the public from normal operations and accident scenario's, is not unreasonable.

There have been no amendments to the licence since it was renewed in February 2002 and effective February 1st, 2006, Zircatec's assets were purchased by Cameco Corporation of Saskatoon, Saskatchewan.

However, this business transaction did not affect Zircatec's legal identity and its qualification to

continue operating the facility as a valid licensee.

Now, I will present the second part of our presentation this afternoon related to CNSC Staff's review of Zircatec's licence renewal application.

The operating licence for this facility expires February 28th, 2007 and Zircatec has applied for the renewal of its licence for another five-year term with specific changes to conditions 2 and 4 of its current licence.

Zircatec requests the changes to its licenced conditions related to the addition of a new production line to produce an enriched fuel product containing approximately one per cent of uranium 235 isotope at its existing facility.

The application was provided in a timely fashion and CNSC Staff's review of the application concludes that it meets requirements.

As part of the CNSC licensing process, CNSC Staff also reviewed the application to determine whether an environmental assessment under the **Canadian Environmental Assessment Act** was required.

Based on this review, CNSC Staff determined that an environmental assessment under **the Canadian Environmental Assessment Act** is not required before the Commission may make its decision in respect of the

application for the renewal of the licence. And an environmental assessment under **the Canadian Environmental Assessment Act** is required before the Commission may make its decision in respect of the application for the request to changes to conditions 2 and 4 the licence for the operation of a new fuel production line.

Accordingly, at this time, CNSC Staff is recommending that the licence be renewed without any amendments to the licence condition 2 and 4 as requested by the licensee in its application because of appending environmental assessment under **the Canadian Environmental Assessment Act** of the proposed operation of a new fuel production line.

This completes the second part of our presentation and I will now turn it over to Mr. Jaferi to continue with the rest.

MR. JAFERI: Thank you. Good afternoon, Madam Chair and Members of the Commission. For the record, my name is Jafery Jaferi. I will highlight Staff's assessment of licensee's performance in key safety areas. I will also update the Commission on any follow-up actions from the January 2002 licence renewal and February 2005, mid-term licence review hearing.

There are nine key safety areas, namely: operations, radiation protection, environmental

protection, quality assurance, nuclear criticality safety, Emergency Management, Fire Protection, Safeguards and Non-Proliferation and security.

Since the security program contains prescribed information, a separate report CMD 06-H19.A was provided to the Commission.

Overall, CNSC Staff's assessment ratings for all nine safety area programs are that they meet requirements.

I'll briefly outlined each safety area program in the next few slides. The safety area of operations cover licensee's operational performance, maintenance of safety related equipment and systems, response to actions raised in internal and external audits of safety programs, conventional health and safety and reporting of unplanned events.

CNSC Staff carried out a review of Zircatec's performance with respect to the operation of the facility during the current licensing term. The review comprised quarterly compliance inspections and the review of information submitted by the licensee, including quarterly and compliance reports, incident reports and third party review reports.

This review found that Zircatec adequately addressed any action notices raised in Staff's inspection

reports, maintained safety related equipment, implemented a program for conventional health and safety of workers and reduced significant reportable events to zero.

Based on this assessment, CNSC Staff concludes that the facility operations meet requirements and that with the safety programs in place, they do not pose an unreasonable risk to health and safety operations and the environment.

A performance rating of “B” with an improving trend was given in this area of safety. Now, I will talk about Zircatec’s implementation of radiation protection program.

At the time of the last licensing hearing in January 2002 the implementation of a new regulatory requirement to determine internal doses to workers had been delayed in accordance with the provisions of the CNSC’s regulatory transition plan.

Zircatec’s proposed internal dose assignment program was reviewed and accepted by the CNSC Staff in February, 2003. Zircatec implemented its internal dosimetry program effective April 1st 2003 as required by the CNSC regulatory transition plan.

Through review of licensee’s records during the quarterly inspections, CNSC Staff verified that the radiation dosages to workers and to the public are

maintained well below the regulatory limits. The maximum annual effective dose to workers during 2005 was below the ALRA target of 10 mSv set in 2004. The regulatory limit is 50 mSv per year.

Total annual dose to a member of the public residing nearest to the facility was estimated to be 0.116 mSv during 2005 and 0.001 mSv during the first half of 2006. The regulatory limit is 1 mSv per year.

Zircatec has been addressing CNSC Staff's inspection findings in a timely manner and in accordance with its corrective actions plan acceptable to CNSC Staff.

CNSC Staff concludes that the radiological risk to workers and public over the current licence term has been low and the overall performance of Zircatec in this safety area meets requirements. A performance rating of "B" with no change was given in this area of safety.

Regarding environmental protection, the prime hazard to the environment from the CNSC licence activities carried out at this facility is uranium dioxide. This hazard is being controlled and monitored at the source by licensee.

In addition to source monitoring, Zircatec has implemented a comprehensive environmental monitoring program to detect any adverse affects on ambient air, soil, ground water and fence-line gamma levels.

During the review period, CNSC Staff inspected the facility quarterly and found that the implementation of this program was effective in controlling releases to the environment. Uranium discharge rates from the facility continued to be well below the licence limit.

The result from the environmental monitoring program show that the facility operations are effectively controlled by Zircatec with the implementation of its environmental monitoring program. A performance rating of “B” with no change was given in this area of safety.

Next, I will briefly talk about Zircatec’s implementation of its quality assurance program. The licensee has a quality insurance program in place to ensure that the licenced activities are conducted in a control and safe manner.

During the licencing period, the licensee updated this program and submitted it for CNSC Staff’s review and acceptance. The latest version of this document dated August 2006 was reviewed and accepted by CNSC Staff. During quarterly inspections, CNSC Staff reviewed Zircatec’s compliance with its quality assurance procedures for preventative maintenance, incident investigation, verification and change control.

Some minor deficiencies were found with investigation of incident and verification of the effectiveness of corrective actions completed. These deficiencies have, to Staff's satisfaction, been corrected by Zircatec within a schedule accepted by CNSC Staff.

In addition, Zircatec completed independent audits of their safety related systems during the current licensing period and implemented the recommendation made in the audit report.

Based on quarterly compliance inspections conducted, CNSC Staff concludes that the quality assurance program and its implementation met requirements. A performance rating of "B" with little change was given in this area of safety as well.

Regarding nuclear criticality safety, Zircatec has a nuclear criticality control program in place to prevent a criticality accident during storage or processing of enriched uranium.

This program, as documented in the criticality control manual dated August, 2006, was reviewed and accepted by the CNSC Staff.

In addition, Zircatec has prepared and submitted a new nuclear criticality safety program manual to conduct the existing and future enriched uranium production activities in accordance with the CNSC and

international requirements to prevent criticality. CNSC Staff is currently reviewing this document and if it met the requirement, it may replace the existing criticality control manual in the future.

CNSC Staff's inspections conducted during the licensing period verified that Zircatec was in compliance with the requirements of the licence and its criticality control program. Based on the overall assessment, CNSC Staff concludes that the nuclear criticality safety program in place and its implementation met the requirements. Accordingly, a rating of "B" with an improving trend is given in this area of safety.

Moving onto the emergency management, Zircatec has emergency preparedness and a response plan in place to cover both on-site and off-site critical emergency events.

Recently, Zircatec updated its program document based on CNSC Staff's review comment and submitted a revised emergency preparedness plan and emergency response procedures manual in April of 2006.

CNSC Staff reviewed this document and found it acceptable to replace the previous one. CNSC Staff has recommended that this document be added to the list of licensing documents in Appendix "B" to the proposed licence.

As requested by the Commission following the February, 2005 mid-term hearing a comprehensive set of actions have been taken by CNSC Staff, the licensee and the Municipality of Port Hope Fire Department to deal with the emergency response issue raised at that hearing.

These actions resulted in an update of Zircatec's existing emergency response service agreement with the Municipality of Port Hope Fire Department. Subsequently Zircatec advanced a number of additional concerns raised by the Port Hope Fire Department to further enhance the combined fire emergency response capabilities.

As of January 13, 2006 a new service agreement was put in place between Zircatec and the Port Hope Fire Department to respond to all fire and rescue emergencies at the facility.

CNSC Staff verified that Zircatec purchased additional emergency response equipment and implemented a fire risk reduction program to assist in overall site response.

Zircatec provided site awareness training to the Port Hope Fire Department's Firefighters in the fall of 2005. At the February 16th, 2006 Commission meeting, CNSC Staff reported in CMD 06-M4 to the Commission that Zircatec has made an acceptable progress

in resolving the previously identified inadequacies in its fire emergency response capabilities available from on-site and off-site resources.

On June 13, 2006 CNSC Staff observed Zircatec's joint emergency response exercise with the Port Hope Fire Department and verified that the combined emergency response capabilities as stated in the new service agreement are available to respond to any fire and rescue emergency at the facility.

During the licensing period, Zircatec completed two emergency evacuation drills, two fire drills, one table top exercise with the Municipality of Port Hope, one criticality table top drill and one fire emergency response exercise with the Port Hope Fire Department.

Zircatec completed follow-up actions to implement any lessons learned from each drill and exercise. Based on the verification of actions completed by Zircatec, CNSC Staff has concluded that Zircatec has adequately addressed the issue of fire emergency response capabilities to respond to fire incidents at its facility.

Considering Zircatec's completion of all outstanding actions respecting emergency fire response and its documented program, CNSC Staff is satisfied that the fire emergency response issue reported to the Commission

at its February 2005 mid-term review hearing, has now been resolved.

Based on this assessment, CNSC Staff concludes that Zircatec's emergency management plan and its implementation, meets requirements. Accordingly, a rating of "B" with an improving trend was given in this safety area.

Now, I will report on CNSC Staff's assessment of Zircatec's compliance with its fire protection program.

Zircatec has a fire protection program in place in accordance with its current licence conditions. The licence conditions reflecting fire protection were initially added to the Zircatec licence at the time of the last licence renewal in March, 2002.

These conditions required Zircatec to comply with the **National Building Code of Canada, 1995** and the **National Fire Code of Canada, 1995**.

CNSC Staff's recommendation to add the requirement of NFPA-801 standard for fire protection for facilities handling radioactive materials in the proposed licence will further enhance this fire protection program.

During the licensing period CNSC Staff conducted a number of fire protection inspections. Most if not all findings have been adequately addressed by

Zircatec.

One action item from the January, 2004 inspection is currently outstanding. This item relates to the installation of an automatic sprinkler system in the fuel storage building and is scheduled for completion prior to the end of 2006.

From the August, 2005 CNSC inspection only five of the 17 action items are currently outstanding. Three of the fire action items are expected to be complete by the end of 2006 and the other two action items are scheduled to be completed by the summer of 2007.

These two outstanding action items consist of preventing firefighting water from leaving the site and installing a fire sprinkler system in the fuel bundle storage building.

CNSC Staff concludes from the review that corrective actions proposed and their completion scheduled are acceptable and that they do not pose an unreasonable risk to the Health and Safety persons or the environment in the interim.

Third party reviews have also been conducted annually on behalf of the licensee and identified issues were promptly addressed.

Based on this assessment, CNSC Staff concludes that Zircatec’s implementation of the fire

protection program meets the requirements and a rating of "B" with an improving trend is given in this area of safety.

In relation to Zircatec's program for safeguard and non-proliferation, CNSC Staff concludes that it meets the requirement and a rating of "B" with no change was given in this area of safety as well.

As already mentioned, due to security reasons, information covering assessment of Zircatec's security program is submitted to the Commission separately.

Now, I will report to the Commission on the other relevant information. Regarding Zircatec's public information program, CNSC Staff reviewed Zircatec's updated program dated January, 2006 and found it acceptable.

Respecting Zircatec's existing preliminary decommissioning plan and financial guarantee in place for the facility, CNSC Staff concludes that they meet the requirement. On cost recovery, Zircatec is in good standing with respect to the payment of licensing fees for the facility.

Regarding the application of **the Canadian Environmental Assessment Act**, Staff concludes that:

(a): and environmental assessment under

the **Canadian Environment Assessment Act** is not required in respect of the application for the renewal of the licence; and

(b): an environmental assessment under the **Canadian Environmental Assessment Act** is required in respect of the application for the requested changes to conditions 2 and 4 of the licence.

Continuing on to the other relevant information, there are five proposed changes to the current licence conditions described in Section 8 of the CMD. The most important ones are the following:

(a) The new licence condition 3.2 is added and current licence condition 1.3 is deleted to further enhance CNSC Staff's regulatory over site to licensees operations;

(b) Licence condition 8.1 to 8.5 for fire protection are to be modified. Two changes are proposed to the current licence conditions.

First, the **National Building Code of Canada** and the **National Fire Code of Canada** have recently been revised and the CNSC Staff recommends that the 2005 latest editions be used in the proposed licence.

Second, consistent with other class 1B nuclear facilities, CNSC Staff recommends the inclusion of NFPA-801 standard for the fire protection for facilities

handling radioactive materials into the licensing requirements.

With the inclusion of NFPA-801, the fire protection program will need to be revised to address additional elements currently not mandated by the national codes.

(c) Appendix “B” of the licence is to be modified to refer to the latest version of the licensing document and to add two new licensing documents to enhance the licence coverage in these safety areas and to provide for additional consistency that other licences issued for similar nuclear facilities.

Regarding the licence period, Zircatec has requested a period of five years. CNSC Staff also recommends a five-year period. In order to keep the Commission informed of the licensee’s performance, CNSC Staff has prepared to submit a mid-term performance report to the Commission in 2009. On future outlook, CNSC Staff is of the opinion that with the recent acquisition of Zircatec by Cameco Corporation, Zircatec may benefit from the management, technical and financial resources available to both companies.

Cameco’s two nuclear facilities in Port Hope are expected to share and learn from each other’s experiences in protecting workers, public and environment.

Subject to receiving a positive decision from the Commission, and compliance with the **Canadian Environmental Assessment Act** requirement, Zircatec will have to reapply for the proposed amendment to conditions 2 and 4 of its licence for the operation of a new fuel product production line.

Next, I will present CNSC Staff's conclusions based on findings from the compliance inspections, the review of licensee's performance data and assessment of licensee's application for licence general. CNSC Staff concludes that:

(a) Zircatec is qualified to carry on activities that the proposed renewed licence will authorize;

(b) Zircatec's application for licence renewal meets the requirement of the CNSC's **Nuclear Safety and Control Act** and its regulations;

(c) Zircatec has made, and in CNSC Staff's opinion, will continue to make adequate provisions for the protection of the environment, the Health and Safety operations and the maintenance of security and the measures required to implement international obligations to which Canada has agreed.

(d) An environmental assessment under the **Canadian Environmental Assessment** is not required before

the Commission may make its decision in respect of the application for renewal of the licence; and

(e) An environmental assessment under the **Canadian Environment Assessment Act** is required before the Commission may make its decision in respect of the application for the requested changes to conditions 2 and 4 of the current licence for the operation of a new fuel production line.

Finally, to end our presentation, I will present CNSC Staff's recommendations for the licence renewal.

CNSC Staff recommends that the Commission:

(a) Accepts Staff's conclusion made in this CMD; and

(b) Approve the renewal of the proposed nuclear field facility operating licence number FFOL-3641.0/2012 to Zircatec Precision Industries Inc. for a period of five years valid to February 29th, 2012.

This concludes our presentation and I will turn it over to Mr. Howden.

MR. HOWDEN: Thank you. Barclay Howden speaking. Madam Chair, that concludes our presentation and Staff is prepared to respond to questions. Thank you.

THE CHAIRPERSON: Thank you both to Zircatec and to the Staff for their presentations.

We will now open the floor for questions for the Commission members and I would to start with Dr. Dosman, please.

MEMBER DOSMAN: Thank you, Madam Chair. I have several questions.

One is the -- with regard to conventional health and safety and the use of hydrogen, and I'd to ask Zircatec if you are confident that there are no occupation health and safety risks; and if the improvements that you made recently, including the alarm system are adequate and if the system has been -- had to be tested and found to work?

MR. OLIVER: Andrew Oliver, for the record.

Zircatec has worked with hydrogen for many years. The gas is used in the sintering furnaces to cause the reducing conditions needed to properly sinter the pellets. And so we have always looked to upgrading the facilities that relates to safety. And to give you more details and the testing performed, I will hand over to Mike Longinov.

MR. LONGINOV: Good afternoon, Madam Chair and Members of the Commission. I am Mike Longinov. I am the manager of Occupation, Health and Radiation Safety.

With regard to hydrogen safety, we have several different elements that we perform to ensure that

we have hydrogen safety.

Number one is, we do have liquid hydrogen facility. We do have third party assessments that we audit against an NFPA standard, 50B. We voluntarily try to meet that standard.

Over the –- well during this past licensing period we have had two instances where someone has come on-site to review the installation. We also have a distribution network of our gaseous hydrogen. It is installed in conformance with TSSA standards.

The use of the hydrogen is also overseen by our hydrogen detection system. During this last licensing period, we installed a hydrogen detection system. Hydrogen, as you know, is lighter than air, so in the sealing of the area over top of the sintering furnaces where we handle the hydrogen, it is installed. We do test it regularly. It is maintained by the vendor. All the detectors are calibrated on a quarterly basis.

MEMBER DOSMAN: Thank you. I would like to ask CNSC Staff, do you have any comments on this issue?

MR. HOWDEN: Thank you. Barclay Howden speaking.

Yes, hydrogen safety is very important. I am going to ask Mr. Jaferi to speak to the verification activities that we do.

MR. JAFERI: For the record, my name is Jafery Jaferi. In our quarterly inspections this is one of the items we normally we look at it, whether these detectors are operating or not.

If not, then we find out what is the difficulty or problem, and at the same time, we look at the maintenance record as Mr. Longinov has mentioned, that they are calibrated on a quarterly basis and that in fact we verify the inspections.

MEMBER DOSMAN: Thank you, Madam Chair. I wonder if I might ask you a question with regard radiation safety. And I would refer to in the Zircatec document, it's Table Two on Page 6 of 29 and in the CNSC document, essentially the same information is on Table Four of CMD 06-H19 and I refer to the highest skin dose in mSv per year and while the levels are certainly within regulatory limits, and below, I note that the highest skin dose has been gradually increasing over time from 54 in 2002 to 96 in 2005 and at the same time, the average extremity dose is decreasing. This is obviously good news, but nonetheless, it would seem that the increasing skin dose then is not due to increasing extremity dose.

And I would like to ask Zircatec if you have any explanation for this finding and whether or not this could represent any potential breakdown in

cleanliness of protective clothing or other protective measures.

MR. OLIVER: Andrew Oliver for Zircatec.

Certainly we're recognizing in a positive area and we do continue to work to having a cleaner and cleaner environment. In terms of finding or describing the specifics of this data, I will turn it over again to Mike Longinov, the Manager of Occupation Health and Radiation.

MR. LONGINOV: For the record, Mike Longinov. We attribute this primarily due to fluctuations in production levels. We do see production rising and falling due to customer requirements. This does have a little bit of an alignment with that.

With regard to extremity, we do put in things -- measures in place to reduce the actual direct handling of the uranium product with the operators and that is shown that we are showing a decreasing trend over this licensing period.

MEMBER DOSMAN: It seems to have been occurring over a modest -- for the last several years and have you been increasing production over that time?

MR. LONGINOV: For the record, Mike Longinov.

The production rates have kind of gone up

and down. They have not been steadily increased or steadily decreasing.

MEMBER DOSMAN: So do I take it that you're not really quite sure, however modest this finding, what this might me due to?

MR. LONGINOV: Mike Longinov.

We'll continue to monitor this. We recognize this. We are still being regulated with action levels. Any time we do hit an action level we are required to conduct an investigation.

From time to time, we do hit an action level and we do conduct investigations. In the past, we have seen some indications of skin dose increases but that has typically been attributed to over-time.

MEMBER DOSMAN: May I ask CNSC Staff to comment on these findings?

MR. JAFERI: Jafery Jaferi for the record.

These fluctuations are basically because of their work practices, how long people work in the area, and that affects those, whether it's the whole body or skin.

However, these numbers are well below the regulatory limit as well as the action levels. Even the action levels are higher than these numbers. We are looking now -- at this stage we're at the final stages of

making all the allowing improvements, shielding and everything else, so it's only basically the time spent by the worker in that area.

MEMBER DOSMAN: Do you think that this could be the result of excessive overtime on the part on some workers? Perhaps, Madam Chair, I should be asking that question of Zircatec.

MR. OLIVER: Andrew Oliver of Zircatec.

We are aware that over-time is higher than what we personally would prefer and we are working to get over-time down.

As I mentioned in my presentation, we are actually hiring additional people so as to avoid this overtime issue as much as possible. So we're sensitive to the issue and are addressing it. Thank you.

THE CHAIRPERSON: Dr. Barnes?

MEMBER BARNES: I wonder if I could turn to the issue – just a couple of comments first.

In both the documents that we have here from Zircatec and Staff, and since this is licensing action and since we're going to Port Hope, I would have thought two things would have been helpful to the Commission and also to people in the community that will be attending the meeting as well, is a map showing the location of the plant, particularly relative to the

floodplain that is addressed in the GRCA study.

I don't think either document produces any map. And I think it would be appropriate, Madam Chair, if there was a organizational chart included. We have a licensee that's been taken over by Cameco as we heard on the 1st of February, and so we have new players and new relationships here which I think should be expressed in a public document here. So it would be helpful to us to know what the reporting relationships were, especially as it relates to safety issues. And I presume both of those could be accommodated on Day-2, presumably from Zircatec.

Then let me turn, if I may to issues of environmental protection which are listed primarily by Zircatec on page 12 to 14 of your document.

And just for clarification, I think the wording, I think, is incorrect as you have it, but I would like to get that.

On page 12, Item 6 of "Environment Protection" from the bottom of the list of bullets says:

> "Soil and vegetative matter surrounding the Zircatec facility is sampled every three years to trend the uranium concentration."

And then on the following page, page 13 in the last paragraph it goes on to point out that this

pattern of sampling has been changed from:

"... every three years for the past 17 years ..."

To on a yearly basis since 2003.

So just for clarification, I think it's the second set of comments that's correct and not the second bullet; is that right, the second last bullet?

MR. OLIVER: Andrew Oliver, for the record.

Yes, you are correct. It is the second last bullet is the shortened version really, when we have the extra three years. It is correct, that since 2003 we have been performing this assessment every year.

Could I just ask you to comment on the map? I just would like to add the comment that we certainly will provide the maps and the organizational chart as you say, but I have mentioned the GCRA Report is not yet available. We certainly expect it to be complete but we expected it to be complete in July, so we are really not in control of that. We will provide all the information that we possibly can.

MEMBER BARNES: Is this a different report than a report we saw this morning? It's a different report?

MR. OLIVER: Andrew Oliver, for the record.

Yes, it's a different report because that

was the report specifically around the conversion facility, a very localized area. This is a different area where we talked about this small stream, this Gages creek which is the next major drainage, little tributary that's east of the Ganaraska River. So it's not part of the Ganaraska River going into the lake, it's another little stream called "Gages Creek" and it's a small tributary of that, Gages Creek that goes through the Zircatec property and drains a relatively small area, so there's not a large water collection possibility.

MEMBER BARNES: Once again, we are dealing with a public process here and we have public hearings in the town in November.

Is the GRCA essentially aware of this and making some attempt to have the report available for consideration in these proceedings?

MR. OLIVER: Andrew Oliver, for the record.

Yes, the GRCA is aware of our interests and the interests of the Commission and the public in this document. I assume we will be attempting to move this forward as quickly as possible.

MEMBER BARNES: If I can comment on soil monitoring, and I'd like to refer to the Staff document on page 23 which the second paragraph that's in the middle of page 23, 6.3.2.4.2, "Soil monitoring."

And it’s talking about the additional sampling that was arranged for the Ministry of the Environment Staff:

> “As promised by the Ontario MOE Staff, samples of soils from vegetable farms located close to Zircatec were taken in the spring of 2005. These samples were analyzed for uranium and other contaminants and results were provided to the farm owners by MOE. MOE did not release the results of these soil surveys to CNSC Staff or any other member of the public due to confidentiality reasons.”

I find this an astonishing statement. This is a public ministry paid by our public funds taking analysis of a company for contaminates that are certainly going to be part of our public process and yet, these are to be made available only to farm owners.

I would have thought farm owners might have done that through a consultant as opposed to the Ministry of Environment and that might have been legitimate.

I fail to see why the Ministry of Environment wouldn’t make these data available in the public forum, especially given the hearings that we’re in.

THE CHAIRPERSON: I believe we have a representative from the Ministry of the Environment with us who could answer this question. Mr. Dixon, I believe, could you go to the mic., please?

Were you able to hear the question?

MR. DIXON: Yes, I did. Thank you, for the record, my name is Murray Dixon. I am with the Ontario Ministry of the Environment.

The group I'm with, we do respond to complaints from the public and in this particular case, we weren't doing a monitoring around Zircatec as such, we were responding to complaints from two property owners next to Zircatec, to the east actually and to the west of Zircatec.

And in as far as releasing data, it is usually our policy to -- if it's on private, we usually don't put the name associated with it when we release it. For example, when we do big surveys in communities we often release the data, but we don't give a specific name to a specific property, and that's the situation here. It's not that we won't release information, it's just that we don't want to release a name with that information.

In this particular case, the soil levels were about two to about five or 4.2 parts uranium and the -- as you know, our background levels are about -- in

Ontario, are about 1.9 parts per million. So these weren't particularly high levels in any case.

In vegetation, we really didn't pick up any measurable levels of uranium at all so – and that's the situation. As far as the pattern relative to Zircatec's property, as I say, these properties were to the west and a predominantly westerly wind. We weren't looking at necessarily the area of highest deposition.

And so in fact the pattern we saw was that as we got closer to Zircatec the levels tended to be lower so probably what we're looking at is historic deposition from perhaps the Cameco -- or of the facility that used to be – well, it is -- in the same area as Cameco. But as I say, the levels were only about 2 to 4.2 parts per million remaining uranium which is not very high for the Port Hope area.

MEMBER BARNES: Well, I thank you for sharing that information. I think that's the kind of information that is useful to know as opposed to the actual location with the land owner.

MR. DIXON: As I say, it wasn't a case that we didn't want to release information, it's just that we don't like tie necessarily somebody's name to a certain number because they can be very sensitive about that and we try to respect that.

MEMBER BARNES: I will pass on this one.

THE CHAIRPERSON: Mr. Graham?

MEMBER GRAHAM: Thank you.

First of all, with regard to the structure of the company and so on, my understanding is that Cameco took over in February, or the transaction was completed; does Zircatec have a separate board of directors?

MR. OLIVER: Andrew Oliver, for the record.

Yes, Zircatec does have a separate board of directors.

MEMBER GRAHAM: So it operates still as a separate company which is solely owned by Cameco; is that correct?

MR. OLIVER: Andrew Oliver, for the record.

Zircatec is 100 per cent owned by a holding company called “Benshaw Industries” and they have their own board of directors and that in turn, is what is owned by Cameco Corporation, so there is a corporation in between.

So it was a control change, an ownership change because the ownership remained with Benshaw. Benshaw was previously part of the organization from which Cameco purchased the assets of Zircatec.

MEMBER GRAHAM: My question then is to CNSC Staff with regard to financial guarantees.

Has anything changed with regard to the structure that has just been explained, that the financial guarantees are in the order in the matter that they were before directly with Zircatec?

MR. HOWDEN: Barclay Howden speaking.

Yes, they are. There is an irrevocable letter of credit from the bank that is covering the financial guarantee.

MEMBER GRAHAM: That was one bank has it and another bank took it over, I believe, is that correct?

MR. HOWDEN: Barclay Howden speaking. You are correct, yes.

MEMBER GRAHAM: The second question to Zircatec is with regard to property.

In reading the document, I believe it indicated that Zircatec owned two properties, a 12 hectare, 12 acre piece of property not adjacent to the property where the facility is; is that correct?

MR. OLIVER: Andrew Oliver, for the record.

It’s one solid property as far as I under stand it, but let me just check with Mr. Jones.

MR. JONES: Lloyd Jones, for the record.

There is one piece of property, however, one portion of it is not under the licence. Only one portion is under the licence and a separate portion, the

larger portion that you referred to, is not covered by the licence.

MEMBER GRAHAM: So the current hectares to the north east of the facility is not covered under this licence. What's on that property; anything that relates to the manufacture or Zircatec?

MR. OLIVER: Andrew Oliver, for the record.

No, there is no property, no operating, no operating activity outside the fence-line of Zircatec, the fence being around the licenced property.

MEMBER GRAHAM: Thank you.

My next question then is with regard to the construction of the building. Is there a basement in that facility or is this a slab on fill?

MR. OLIVER: Andrew Oliver for the record.

This is a slap on fill property.

MEMBER GRAHAM: And as a follow up to what Dr. Barnes has said then, when you're providing the maps and so on, you will be able to give us the elevation, the floor elevations and so on so that if there -- if there was a flood that happened one or two years ago in Peterborough where a lot of the downtown was flooded, you, we can see exactly how high the elevation versus the elevation of the parking lots?

MR. OLIVER: Andrew Oliver, for the record.

Yes, certainly, we can provide you a map with elevations.

MEMBER GRAHAM: Can I have another question, Madam Chair? Okay. Thank you.

With regard to the licence conditions with regard to fire protection and they were also mentioned with regard to -- mentioned before.

Will the licences as presented, the draft licence as presented in the documents we have today, be modified any way in Day-2 with regard to fire protection? There was talks with modification of 8-1 to 8-5. This is with the modifications, this licence condition now?

MEMBER HOWDEN: Barclay Howden speaking.

Yes, the licence conditions that you see in a proposed licence are the ones that CNSC Staff would like the Commission to accept. Our intention is not to have any changes coming to Day-2.

MEMBER GRAHAM: Thank you. Just one further question, Madame Chair.

On page 17 of CNSC’s document, Table 4, skin doses, and I think Dr. Dosman was asking about that, but is this trending higher or is this -- or does this meet the – the average I guess is 54.3 to 72.2, the regulatory limit is 500, but is this trending higher or is this similar to what other facilities are? This seemed

high and I just wondered, is it higher or is it alarming?

THE CHAIRPERSON: Perhaps, Staff may wish to express certain terms of action levels or other issues to do with -- and I think you've addressed a bit before, but referring to action levels and also perhaps the ALARA plan?

MR. JAFERI: Jafery Jaferi, for the record. The action levels for skin is 55 mSv.

MEMBER GRAHAM: Action level is 55 and this is 72.2; is this correct? Am I reading that correctly?

MR. JAFERI: Jafery Jaferi, for the record.

55 is for one quarter. Every quarter they monitor skin and that average should not exceed 55 mSv.

MEMBER GRAHAM: So what is the average -- do you have the average with regard this table?

MR. JAFERI: Jafery Jaferi, for the record.

We don't have action levels for annual skin dose, however, we -- CNSC Staff regulates based on the quarterly skin dose action level, which is 55.

MEMBER GRAHAM: I don't -- I beg to my ignorance, but I just -- how does the 55 relate to the 72.2; that's what I don't understand.

MR. JAFERI: Jafery Jaferi again, for the record.

55 in every quarter, and if we multiply it by 4, so you will end up with something --220, yes. And this is the annual number which is given in the table. I hope I clarified it.

MEMBER GRAHAM: So in other words, I divide by 4 to get the 72.2 by 4 to get the average, is that what you're saying? Okay. Thank you.

THE CHAIRPERSON: I think we really do need to explain this better.

I think my sense is that we're talking about the highest skin dose in mSv that was experienced in that and year. And the exceeding of the action level is explained on page 18.

So I think we probably might go to Cameco -- I mean to Zircatec. I think you may be able to explain this a little bit better, but if we go back to -- Mr. Graham's question was further to the answer to the previous question with regards to this -- is this of concern? Where is this trend going and perhaps you could explain it in terms of issues like action levels, et cetera; the number of employees who have exceeded this dose that type of areas.

We're trying to get, I think Mr. Graham, a sense of whether we should be more concerned about this.

MR. OLIVER: Andrew Oliver, for the record.

Certainly whenever there is trends upwards they are a concern to us because we look, as we have mentioned before, for continual improvement.

And we are certainly cognisant of this issue as we design new equipment for the new SEU line that we will be working on in the future, and you will be hearing more about that.

So you will see some changes in this, I hope, but relative to action levels and the past history, I will turn the comment back to Mike Longinov.

MR. LONGINOV: For the record, Mike Longinov.

Just to clarify everything I've got here. We have a quarterly action level. When we have a result back from an operator that is below 55 mSv for that quarter, we do not conduct an investigation. If it is above that, we inform CNSC Staff of it and we conduct an investigation.

What we have -- what you are seeing there, the 72.2 is the highest skin does for the period of January to June, which is two quarters. So what we're seeing, is we did not have an action level exceeding so between the 1st and the 2nd quarter, nobody exceeded the 55 mSv quarterly action level.

Now, the action levels we set at Zircatec,

under the CNSC regulations, are put there to indicate a loss of control over the radiation protection program. Zircatec takes it one step further. We put these numbers as aggressive as we can in trying to intertwine a loss of control with continuous improvement. So we try to balance continuous improvement with loss of control, potential loss of control.

THE CHAIRPERSON: Dr. Paquet?

DR. PAQUET: Merci, Madame la présidente. I would like to go back to the organization structure. I understand that there are two separate companies, two separate board of governors and probably two separate officers responsible for THE training program and for the safety. Am I right?

MR. LONGINOV: Let me – to clarify further.

Zircatec Precision Industries is held by Benshaw Holdings which is owned in turn by Cameco Corporation.

The board of directors of Zircatec is taken from the executive of Cameco Corporation. So there is that immediate -- they are all internal board members in essence to Cameco Corporation. And although formally there is a board of directors for Benshaw Holdings, they are identical to the board of directors for Zircatec's Precision Industries. So they are the same people – it's

the same people who are executives within Cameco Corporation and has the commitment to safety that you heard from Mr. Grandey first thing this morning.

MEMBER PAQUET: Okay. So that means when we go through what we call the future outlook blending of corporate companies, it's already done or it's a plan?

MR. LONGINOV: This is more of a question of integrating a new company into the Cameco structure, as it were, and it takes some time to do that.

We are in the process of doing exactly that, increasing the documentation, tracking, trending of the statistics within Zircatec to be consistent with the statistics that are tracked within Cameco Corporation so that they can – you know, we can compare the trending, confirm we are improving, take advantage of any enhancement programs that would exist within the Cameco Corporation. I would say we are still in transition, but we are benefiting from being part of Cameco Corporation.

DR. PAQUET: Does that mean that the objects have to have ISO 14001 implemented to Zircatec , will be implemented in both companies?

DR. OLIVER: Andrew Oliver, for the record.

If you look at Cameco Corporation sites within Canada, operating sites, all the operating sites are registered to ISO 14001 except Zircatec. So Zircatec

is, in a sense, catching up.

DR. PAQUET: Thank you.

THE CHAIRPERSON: Thank you very much. Dr. McDill?

MEMBER MCDILL: Thank you. Three questions.

Could you remind me, Zircatec, what the smallest -- the diameter of the sphere that represents the smallest critical mass is -- you referred to it on page 11, and I would just ask what is the approximate diameter of the sphere?

MR. OLIVER: Andrew Oliver, for the record.

The diameter of the sphere is very dependent on the enrichment level of the uranium, so you have to give me a little more data, but to give you an idea, the range that I carry in my mind -- and I'm not an expert in this, there are greater experts within your CNSC Staff.

But I think it's instructive to think that if it is five per cent, then the weight of the material that would define the smallest critical mass, is about 37 kilograms. Whereas if you were dealing with one per cent, which you will hear more about in SEU's story of the future, you are dealing with 1,700 kilograms. So there is a huge change in mass and volume as the enrichment

decreases.

I hope I clarified things, otherwise, I think you should ask your CNSC experts on enrichment and criticality.

MEMBER MCDILL: That's what I was trying to figure out, how much 1,700 kilograms was in -- but perhaps Staff could -- is the Staff in a position to give me a diameter to go with each of these? It's mostly for the public who might wish to know how big an object are we talking about, because you argue there is no criticality risk, right?

MR. HOWDEN: Barclay Howden speaking.

That's a tough question and I'm hoping that our criticality specialist, Dr. Khotylev can respond to it.

DR. KHOTYLEV: For the record, my name is Dr. Vladimr Khotylev. I am working the physics and fuel division.

I do confirm numbers which you've heard from Zircatec. For example, if we are talking about one per cent enrichment and we are talking about pure metal uranium, then small a critical mass will be about 1,500 kilograms.

Obviously, you have to take into account that this mass should be diluted by water and it should be

submerged by water with a very significant reflector, so we are talking about metres, here.

MEMBER MCDILL: Thank you. The object was to illustrate the difficulty of getting something that would be under water.

MR. KHOTYLEV: Madam Chair, can I just add a little more? We were just discussing here, the volume of UO2, which is a material, when you think of it about shipped, it's like about four drums of UO2, if it is easier to visualize a drum rather than in metres/diameter.

MEMBER MCDILL: And if there should be a fire and the sprinkler systems which are coming into play should be activated and the berms should be in place at the door, is it possible for the building to fill up to the point where this would occur?

MR. OLIVER: Andrew Oliver, for the record.

This will all be part of the detailed analysis that will be part of the SEU presentations that will come in the future.

I believe that it's not possible to have what you're describing as a six-inch slab in essence of this uranium dioxide and obtain a criticality at one per cent, but I think it's premature to go into too much detail.

MEMBER MCDILL: I wasn't so much concerned

about the SEU as the current licence conditions; would Staff's expert like to answer that as well?

MR. KHOTYLEV: For the record, Vladimir Khotylev.

Well, current licence limits for enriched uranium includes an enriched uranium up to five per cent enrichment and up to five small critical mass. So obviously much of the uranium exceeds one small critical mass.

In such a case we can not say that a criticality accident is theoretically precluded. So there are critical events which can lead to situations, but they are mostly theoretical because this uranium is split into a number of pieces in a number of various areas. Each of them contains less than approved sub-critical limits which is 80 per cent of a small critical mass.

So if were talking about a theoretical possibility, we can't exclude it. If we're talking about any critical or beyond critical or – an excess scenario, and there are adequate provisions which would include this.

MEMBER McDILL: My second question is at page 15 of Zircatec's CMD with respect to pressure retaining components are contracted out; is the contracted out work done on-site or off-site? Cameco -- or Zircatec?

MR. LONGINOV: For the record, Mike Longinov.

Pressure retaining components, we do not have anyone in-house that is qualified to handle pressure retaining components. All of that is done by qualified outside personnel.

MEMBER McDILL: And the work is carried off-site or do qualified personnel come in and do the work on-site?

MR. LONGINOV: No, our equipment is not able to be removed, so it is done on site.

MEMBER MCDILL: And my last question relates to the Staff of CMD on page 23 with respect to the ground water monitoring and one of seven wells is in the range of 0.82.16mg/l.

I just wanted to be certain I understood that; it's only one well of seven that's reporting that and where is that well positioned on the site? It's the last sentence on the page. It's page 23 of the Staff's CMD, 6.3.2.4.3, ground water monitoring, It is a CMD, isn't it?

MR. LONGINOV: For the record, Mike Longinov.

We are just looking at a map that we brought with us. Unfortunately it's kind of small; we

can't really determine which is the well -- monitoring well, Number 8.3, but it appears that it is on-site if that helps?

MEMBER MCDILL: No. It definitely is not on-site. I think it's fairly clear it's -on-site from the text, I'm just wondering where -- I mean is it close to – you know, is it north, is it south, is it east, is it west? Perhaps, that could come back on Day-2 just for clarification?

MR. LONGINOV: Most ---

THE CHAIRPERSON: You maybe you could ask the Staff.

MEMBER MCDILL: Or ask the Staff, they may know.

MR. JAFERI: Jafery Jaferi, for the record.

All these wells on site, the one which is the highest one is inside the building itself. It's my recollection, but Zircatec should confirm it.

THE CHAIRPERSON: Well then I think, Dr. McDill, we have a request for Day-2 for all the specifications with regards to the location of all the wells. If we could have those locations and perhaps a summary of the values for all those wells and including that one, and a postulated explanation for that, please. Actually, for the AL levels. Thank you ---

MEMBER McDILL: Actually an explanation for the uranium levels.

THE CHAIRPERSON: Thank you. Mr. Harvey?

MEMBER HARVEY: 63243; we can read the results from 2001 to 2005, the uranium concentration in 43 of 50 water samples collected had been below the Canadian drinking water objective far below -- what should we understand from that word, “below”? We don’t have any figures.

THE CHAIRPERSON: Zircatec.

MR. OLIVER: Just to clarify. Our understanding is that the Canadian drinking water standard is .02 milligrams per litre and we are just checking in the tables that we have with us. what were the values that were below that .02 milligrams per litre. That’s my understanding of your question; is that correct?

MEMBER HARVEY: Yes, I’m just asking how far below. It’s just below or well below ---

THE CHAIRPERSON: Maybe also of the similar letter above, the ranges as well.

MR. LONGINOV: If you like, I can kind of recite some of the numbers that I have right in front of me. I’m sorry, for the record, Mike Longinov, 0.0030, 0.001 below detection level, 0.002, 009.0015, below detection; .033 below detection, .011, .002, .10, .13,

.072, .028 does that help?

MEMBER HARVEY: That's okay. Thank you.

Another question, and I gather when you told me -- page 24.

It is written that the perimeter has been resolved for a good correlation between the amount of uranium dioxide and uranium contaminated waste stored at the facility -- where the volume of such weight increases in the future and what could be the impact of such increase?

MR. OLIVER: Andrew Oliver, for the record.

The dose comes mainly from the storage of fuel. It has been finished and ready for shipping and so -- and that's the reason we put in the berm that you noticed that really knocked down the radiation field at the perimeter so that we have a much reduced level of radiation at the perimeter.

And the volume of fuel stored on site is limited by the building that's there so we don't anticipate – well, a reason for increased and that and because of the berm there will be an ongoing decrease of the radiation as seen by the public.

MEMBER HARVEY: Thank you.

THE CHAIRPERSON: So page 12 of 29, Item 6.

MEMBER HARVEY: Yes, okay, I was in the wrong document. It's it highly unlikely to contain uranium dioxide or how is it determined -- is this something that could change with the time or it's unlikely forever? Is this something that you have to check periodically or it's already determined that it's unlikely?

MR. LONGINOV: For the record, Mike Longinov.

Most of our emissions to the sanitary sewer are things such as the showers for the decontamination of our individuals at the end of their shift, as well as things like hot laundry water, that sort of discharges.

MEMBER HARVEY: So you don't expect that the could increase?

MR. LONGINOV: Yes, you are right, these are not expected to increase.

MEMBER HARVEY: Okay. Thank you.

THE CHAIRPERSON: Perhaps, Mr. Harvey, if you agree, we will ask the Staff for their comments with regard to that?

MR. HOWDEN: Barclay Howden speaking. I'll ask Mr. Jaferi to comment on that.

MR. JAFERI: Jafery Jaferi for the record.

All the sanitary discharges are being

monitored at the end of the facility when they mix with the process waste water and they're being monitored -- they're always well below 2 parts one million. That's the action level we have.

MEMBER HARVEY: Thank you.

THE CHAIRPERSON: So we can rely on this to be continued to be monitored?

MR. JAFERI: Jafery Jaferi, for the record.

Yes, it's part of the environmental monitoring program in place and they will continue to be monitored.

THE CHAIRPERSON: Thank you. I've got a couple of questions. I'm still a little puzzled about the licence and fire protection and I hear the comments from Zircatec on concerns about the licence -- the licence articles on fire protection. So I'm referring to page 6 of 22 of the licence, proposed licence from the CNSC and Item 8, Fire Protection on the licence.

I'm trying to get a sense of what the Staff are asking for in terms of timing for accordance and compliance with the -- for example, various aspects under both 8.1 and 8.2 versus what Zircatec is saying are their concerns about this compliance timing.

So I think I'd like to understand what the Staff are asking for in terms of the timing for adherence.

Does this mean when this licence comes in, which I think is -- I understand Zircatec's concern, is that this would immediately be applicable and therefore they would be in non-compliance on this licence; or is there in this licence a sense of transition timing and perhaps I'm just not reading it correctly.

This is probably a question I should have asked as well for Cameco.

MR. RABSKI: Henry Rabski, for the record.

Our expectation is that if the Commission accepts the licence conditions as laid out in Section 8.1, so obviously for new improvements the facility that the new codes, the **National Fire Code** and the **National Building Code** be adopted to 2005 versions.

With respect to the NFPA-801, we have conducted several audits over the last couple of years on fire protection working towards the compliance to 801, anticipating this coming before the Commission.

Some of the key items as pointed out already by the licensee, have been initiated and some will be completed in the coming year. For example the containment of site water in the event of an emergency is a requirement under NFPA-801. It's scheduled for July, 2007 to be completed.

Some of these initial 801 requirements

which have been initiated and have target deadlines, we expect compliance by those target deadlines. As we work through the NFPA-801 requirements we will be looking at compliance and setting dates as we move forward, so there will be expectation initially to work the licensee to come into compliance with things that they haven't already initiated over the commencement of the next licensing term.

THE CHAIRPERSON: But I'm sorry, when I read this and perhaps I'm missing something here, I don't see anything 8.1, 8.2 or 8.3, the transitional program, and this comes into affect in February. And the plan is for changes over the next year.

So perhaps it's there and I just don't understand where it is that allows for this transition program timing.

MR. RABSKI: For the record, Henry Rabski.

You are correct. We did not include a transition phase in the condition as it's stated and it's anticipated that we will require a transition for licensee's to come in compliance with these new standards.

THE CHAIRPERSON: Well, then I'd suggest that between now and Day-2 that there be some revisions to this licence, because then you'd have to come back before the Commission, which I don't think you really want to do,

for any amendments in terms of timing.

So if you can build in a suitable way, that into the licence for Day-2, I think that that would be appropriate. And although I am probably not supposed to do this, you could make sure that that happens for Port Hope as well.

MR. RABSKI: Henry Rabski, for the record.

We will take that under advisement and move forward on putting a transition clause.

THE CHAIRPERSON: Thank you.

My second question is we didn't make a particular statement at the beginning, that information from one hearing could be used in another. We usually do that in areas where they're -- we see there's some appropriate necessity to do that, but I'm advised that the Commission can do that any way, we can take information from one and do it to the other. So I'm going to in this case, ask for it to be done for Port Hope as well.

But my question is with regards to safeguards actually; I'd like to know note that we had a very thorough report and explanation by Mr. Casterton this morning with regards to Port Hope, but I think that this is appropriate for us -- I still don't believe it was covered in the summary that was given to us on the facility, but my understanding from reading the CMD is

that this was also a period of transition for Zircatec as well in this facility or that -- it wasn't? Okay, but I still would like a sense of the overview of the safeguards requirement for Zircatec's facility from Staff, please. Mr. Howden?

MR. HOWDEN: I will let Mr. Casterton speak to speak to those issues.

MR. CASTERTON: Thank you, Madam Chair. For the record, my name is Jim Casterton.

You are correct, Madam Chair, in that the situation at Zircatec is different from the situation at Cameco, Port Hope that we discussed this morning.

Zircatec has been under safeguards for many years. It has complied with the safeguards requirements. It does have a program in place to ensure that it is in compliance with the safeguard requirements. There are regular IAEA inspections in which we participate and it is very similar to the Port Hope Facility in the sense that there is one physical inventory verification annually. There are two interim inventory verifications and usually associated with the physical inventory verifications, there is a design information verification.

At the moment we are working with the facility in updating its "DIQ", which is the design information questionnaire required by the agency to ensure

that all elements of the facility relevant to point of view of safeguards have been identified and then an appropriate safeguards approach is in place.

So that it is an ongoing effort with Zircatec at the moment. They are in full compliance with the safeguard requirements from the licencing conditions and as far as IAEA is concerned. Thank you.

THE CHAIRPERSON: May I -- in terms of the comments that you made earlier today with regards to the changes that are expected on safeguards, can we assume that those changes in terms of approaches would also be applicable to this facility?

MR. CASTERTON: Jim Casterton, for the record.

Yes, Madame Chair, all facilities in Canada will be affected by this change and approach by the International Atomic Energy Agency. The actual implications for fuel fabrication facilities such as Zircatec are still under development by the IAEA and we are consulting with them we are keeping Zircatec and other facilities in Canada advised of the situation.

THE CHAIRPERSON: Thank you.

My next question is with regards to emergency preparedness. One of the concerns I have is that we've talked so much about fire protection that its

become equated with emergency preparedness and certainly emergency preparedness is bigger than that as well and acknowledging what is in the Zircatec and the Staff one.

In previous discussions, we've had a little bit of, I suppose emphasis on the broader organization of Port Hope, I think it's a "CAR" or "CARE" – yes, "CARE.

I don't believe it was mentioned very much and I'm also interested in whether the Emergency Measures Ontario has ever been involved in any discussions that you've had in the Zircatec facility and in the plans that you've had, so the involvement of those two organizations?

MR. OLIVER: Andrew Oliver, for the record.

Certainly the response that we have set up now is primarily with the Port Hope Fire Department and that was proved by our exercise working well.

In terms of support from other groups around, even including the conversion facility of Cameco's, that help would be there under the "CARE" umbrella. So "CARE" is, you know, aware of our needs and would be able to respond as a further support to the Port Hope Fire Department.

In terms of the Emergency Measures Ontario, I don't think I have the background to say enough, so let me just see if Mike Longinov can help on that one.

MR. OLIVER: Andrew Oliver, for the record.

Sorry, I have not been active myself in the CARE Committee so I'm told that the Care Committee has a member from Emergency Measures Ontario in that Care Committee so there is information flowing from one to the other.

THE CHAIRPERSON: Thank you. Because one of the challenges we've had in looking at emergency management and emergency measures has been, in fact, the coordination that is necessary on levels of government and for the licensees, I think that's been a challenge.

We're going to take a 15 minute break – yes?

MR. STEANE: Bob Steane, for the record.

Madam Chair, if I could have your indulgence, I would like to go back to The NFPA-801 licence condition.

The theme that has been expressed, and I think you've picked up on it with now the Zircatec hearing. It's the same theme that is being expressed in the Blind River Refinery, the Port Hope conversion and the Zircatec Fuel Manufacturing Facilities.

We do think that we need to look at, as we said in the conversion facility presentation, we agree with the objectives that are going towards 801, but do think we need to look at a transition period.

It will vary from site to site. The challenges at different facilities will be different and that's where we look forward to some discussion with Staff and coming up with what would make sense in terms of a transition. So it's a global thing that we don't have to talk about it again tomorrow with the Blind River hearing, it's the same thing.

THE CHAIRPERSON: Or we'll talk about it tomorrow. Because now that I've figured out that I can ask it on the other, I will certainly be bringing it back. But I think that it's important that when we look at the site specific transition plans that there is a very sharp pencil look at this in terms of what can be done. And so I think the Commission will expect a degree of specificity that says "Why can't we do it by then" or "Why can we not do it by then." I think there's a reasonableness here as well.

So that's the question. We're going to have a break now that's going to be two minutes shorter because we're coming back at 15:45, but I will come back with one question and it's going to be about health studies.

So we will come back in, at 15:45 for more questions. Thank you.

--- Upon recessing at 15:33 p.m.

--- Upon resuming at 15:45 p.m.

THE CHAIRPERSON: One of the subjects that hasn't come up today in the context of either hearing but it has been a subject in the past for the Commission and certainly a subject that has been raised at a number of the issues. And someone mentioned and it came up, I believe in the surveys as well, is the issue of health studies.

So I would like to ask the CNSC Staff if they have any views with regards to this in a macro or a specific nature. Mr. Howden?

MR. HOWDEN: Thank you. Barclay Howden speaking, for the record.

Yes, this health studies has been an ongoing issue and as you can hear from discussions within the community, it continues. What we would like to do is

just give the Commission a brief overview of what has been done with regards to health studies, who did them, who was involved and what the conclusions were such that the Commission can understand well what has been done and why we've drawn our conclusions. Would that be satisfactory? I'm going to ask our Epidemiologist, Rachel Lane to speak to this issue.

MS. LANE: Rachel Lane, for the record.

The three most recent epidemiological studies conducted in Port Hope over the last few years include the following: First of all, the "Cancer Incidence in Port Hope, 1971 to 1996" was completed August, 2000.

In this study, Port Hope residents' cancer incidence was compared to the cancer incidence of the general Ontario population between 1971 to 1996.

The main conclusions of the study was that there was no overall excess of cancer cases in Port Hope compared to the general Ontario population during the 25 year period studied. The study was prepared for the Canadian Nuclear Safety Commission by Dr. Yang Mao and Mr. Robert Semenciw of the Environmental Risk Assessment & Case Surveillance Division, Cancer Bureau, Laboratory Centre for Disease Control, Health Canada.

The study was externally peer reviewed by

Dr. Eric Mintz who was a consultant at the request of the Port Hope Community Health Concerns Committee and Dr. Gerarda Darlington from the University of Guelph.

The second study was the “Cancer and General Mortality in Port Hope 1956 to 1997”. In this study, Port Hope residents’ mortality was compared with the mortality of the general Ontario population for the period, 1956 to 1997.

The main conclusion of the study was that there was no overall evidence of excess cancer deaths in Port Hope for the 41 year period studied. However, there was a significant excess of circulatory disease deaths in Port Hope residents.

The study was prepared for the Canadian Nuclear Safety Commission by Dr. Yang Mao and Mr. Robert Semenciw of the Surveillance and Risk Assessment Division, Centre for Chronic Disease Prevention and Control, Population and Public Health Branch, Health Canada.

This study was externally peer reviewed by Dr. Gerry Hill from Queen’s University, Dr. Lorraine Marrett from the University of Toronto and Cancer Care Ontario and Dr. Ron Lees from Queens University.

Thirdly, the Updated Eldorado Nuclear Study was just completed March, 2006. The original Eldorado Study of Uranium and Radium workers in Port Hope found no

unusual mortality among Port Hope workers.

The updated study that was just completed linked records of 3,003 Port Hope radium and uranium processing workers who worked for Eldorado Nuclear Limited to the national mortality records from 1950 to 1999, almost 50 years of mortality follow-up and to the national cancer incidence records from 1969 to 1999, 30 years of cancer incidents follow-up.

The first analysis compared the mortality and cancer incidence of workers with that of the general Canadian male population. Overall, Port Hope workers' mortality and cancer incidence was the same as the general male population of Canada. There was no significant excess cancer mortality or cancer incidence. However, Port Hope workers have significantly higher mortality rates from hypertensive disease.

The second internal analysis compared Port Hope workers radon progeny exposures and gamma ray exposures with lung cancer specifically, all other cancer cases and other causes of death.

The analysis did not find a significant relationship between radon progeny and lung cancer mortality in the Port Hope workers. The analysis also found no relationship between radon progeny and any other cause of death or any other cancer site.

Also, the analysis found no relationship between gamma ray exposure and any cause of death or cancer incidence in Port Hope workers.

This study was conducted by the Saskatchewan Uranium Miners study working group. Dr. Geoffrey Howe and Dr. Lydia Zablotska of Columbia University in the United States conducted the statistical analysis. The study was externally peer reviewed by Dr. Doug Chambers of SENES Consultants Limited, Dr. Richard Hornung of the University of Cincinnati in the U.S. and Dr. Daniel Krewski from the R. Samuel McLaughlin Centre for Population Health Risk Assessment, Institute of Population Health.

The CNSC stands behind the findings of the cancer incidence and cancer in general mortality reports and the Updated Eldorado Study. Overall, the studies show no overall evidence of increased cancer incidence or cancer mortality in Port Hope residents or workers. However, there is an excess of circulatory disease mortality in Port Hope residents and an excess of hypertensive disease mortality in Port Hope workers.

These findings are based on almost 50 years of mortality follow-up and 30 years of cancer incidence information.

These three studies were conducted by

respected scientists and peer reviewed by internationally recognized university-based experts who support the study findings.

Numerous other health studies conducted in Port Hope have looked at the health of the public and workers. The studies consistently conclude similar results.

Also, studies looking at doses to the public from ionizing radiation indicate Port Hope levels are not of sufficient magnitude to expect health effects. The findings in Port Hope are consistent with the extensive body of research that exist internationally, on the relationship between ionizing radiation and cancer. This forms the credible foundation for our understanding of radiation risks. Thank you.

THE CHAIRPERSON: Thank you.

Now, we will start – those are the end of my questions. If there is any Round 2, Dr. McDill, I think you indicated you have a question.

MEMBER McDILL: Thank you. I had just one but I think Mr. Dixon of MOE has gone? I wanted to ask -- thank you.

You reported briefly on uranium levels but my second question was, were there other contaminants that we should be aware of at levels that we should be

concerned about?

MR. DIXON: No, there weren't, no.

MEMBER McDILL: Thank you.

THE CHAIRPERSON: But you did remind me, Dr. McDill, that I should mention that I would like to have the Secretariat invite both the Ontario Ministry of Environment and EMO also to Day-2 of the hearing on our behalf. I think it would helpful for them to be in attendance at that time.

Other questions. Sorry, Dr. McDill, are you finished? Dr. Barnes.

MEMBER BARNES: I just have two – one for Zircatec.

We haven't discussed very much the public information program that you outlined, and particularly pages 25 and 26, and do you report a number of meetings that you are arranging, including the Information Day, but there was no indication of level of attendance.

Do you have an approximate recollection of how many people would have come to those?

MR. OLIVER: I think -- we did have one separate Information Day at the Port Hope Fairground. Sorry? I'm sorry. For the record, Andrew Oliver.

Yes, we had one day which was an Information Day just for Zircatec which we had about three

hours over lunch time and another three hours in the evening when we're opened to discuss anything with anybody who wanted to show up and we had a number of displays around there. We had about 70 people through in those hours, so in that sense it wasn't a high attendance, but of course later on we participated with a Cameco public information session and the most recent event was the fair -- the tent at the fair which was a much large display. And as Mr. Steane mentioned, we had something near 4,000 people go through that tent and there was a display specific to Zircatec in that tent.

MEMBER BARNES: Madam Chair, my second question is related to Staff, and you refer to licence. And I wonder if in the current licences – I am puzzled why there is not any licence condition or specification for a program in environmental protection.

There are many sections dealing with safeguards, 15 components. There are many sections dealing with fire protection and if I look for the world environment, I think the only place it occurs in 2.2 which is:

> "The licensee should control, measure, record releases of nuclear substances and hazardous substances from its facility to the environment and such

releases shall not exceed the limits ...”

That seems to be very small acknowledge of what a company these days should be doing which is not just meeting regulations, but demonstrating that there is no adverse effects on the environment through some specified programs.

So maybe it’s a question to Staff whether there should be something more substantial.

MR. HOWDEN: Barclay Howden speaking. I’m going to ask Mr. Jaferi to respond to that.

MR. JAFERI: Jafery Jaferi, for the record.

We have this condition which refers to Appendix “B” of the licence and there we have the radiation and environmental protection program manual and everything which is mentioned in the program manual applies to this licensee, and they have to comply with all the environmental source monitoring, environmental ambient monitoring, soil, ground water, so all the requirements are there in that document and they have to comply with that.

And also if we look at Appendix “C”, I believe, it gives the emission limits and action levels and those are also related to the environmental protection.

MEMBER BARNES: Okay. Thank you.

THE CHAIRPERSON: Further questions? Mr. Harvey?

MEMBER HARVEY: Yes, a small question about the public information.

On page 25 of 29 of Zircatec presentation it is written. I can read it:

> "The information day was well attended with most attendees expressing positive views with respect to Zircatec's operation."

So there was all the people that expressed concerns, I suppose. And on page 26 we can read:

> "General Forum – community concerns were collected and graded for importance for future forums."

Can we have an idea of the concerns expressed, because we see there has been two or three forums there, but it would be good to have an idea of the concern expressed during those meetings.

MR. OLIVER: Andrew Oliver, for the record.

The concerns that were expressed were more related to the SEU project I think and the future use of larger amounts enriched uranium. That was my recollection of where the concerns lay.

Otherwise, it was more a case of just knowledge about Zircatec, that people didn't really know what we did and we needed to clarify for them what we did. That was the themes, I recall.

MEMBER HARVEY: Thank you.

THE CHAIRPERSON: Dr. Dosman?

MEMBER DOSMAN: Thank you, Madam Chair.

I have a question for Zircatec but before that, I'd like to go back to the presentation by Ms. Lane, if I may, and I'd like to thank you for your presentation and the information.

I'd like to ask you if the scientists had any views on the causes of increase prevalence of cardiovascular hypertensive problems in the community?

THE CHAIRPERSON: If it relates to the mandate of the CNSC.

MEMBER DOSMAN: Thank you for that clarification, Madame Chair.

MS. LANE: Rachel Lane for the record.

For the cancer incidence and mortality studies – well, sorry, for the cancer mortality – sorry, the cancer in general mortality study, the high cardiovascular disease was at the community level so -- and we did not look for any causal relationship, we just -- it was a descriptive study. So I'm not in any position

to determine why or why not that was high.

However, for the study of workers, we did an internal comparison of workers looking at their exposures to radon and their exposures to gamma radiation and we looked at all causes of death to see whether those exposures caused any of the health effects.

The only relationship, and it wasn't seen in Port Hope, but it was in the Beaver lodge and Port Radium Miners was the relationship between radon progeny and lung cancer. However, there was no other relationships found for – there was no relationship found for cardiovascular disease linked to radon progeny and cardiovascular disease or hypertensive disease and gamma, so that indicates that in this study, there is not -- we did not find a relationship between exposure and the health outcome of hypertensive disease.

MEMBER DOSMAN: Thank you for that information. I appreciate it.

I'd like to come back to the issue of radiation protection and the monitoring of workers, and if we refer to CMD 06-H19, page 18, the 6.2222 action levels, the last paragraph refers to some 1,500 samples over four years.

If I do the math, that comes out to about 375 per year and if there 150 odd workers, that would be

maybe two or three samples per year. So I would like to ask Zircatec what is the monitoring frequency of the urine samples and particularly as urine samples represent short-term exposures; and then I'd like to ask another question if I may, Madam Chair.

MR. LONGINOV: Mike Longinov, for the record.

Our program requires the sampling of every worker every two weeks and we also allow our workers any time they feel the need, any time they want, to offer to our lab additional samples any time.

MEMBER DOSMAN: May I ask, is that at any particular time of the day?

MR. LONGINOV: Sorry.

MEMBER DOSMAN: Madam Chair, are the samples taken at any particular time of the day?

MR. LONGINOV: For our routine program the samples are required to be submitted Monday morning prior to entrance to the plant and any other samples that the employee wishes to give voluntarily, can be done at any time.

MEMBER DOSMAN: May I ask CNSC Staff, would the submission of samples on Monday morning tend to under-estimate exposures if there's been exposure on the weekend?

MR. HOWDEN: I'm going to ask Mr. Jim Sandles to respond to that question.

MR. SANDLES: For the record, my name is Jim Sandles.

I currently work in the emergency management programs division, but I was the radiation safety specialist for this facility for a number of years.

he purpose of delaying until Monday morning to look at the uranium samples is to eliminate what is called "prompt urinary excretion", so you're typically looking at excretion of uranium from the organs and that gives you a better sense of what's being retained and excreted by the various models for uranium excretion which will allow you to give a better determination of dose.

And the other is just a screening tool to identify when a person gives a sample from any time they want, that they may or may not have been exposed to uranium and have an update that needs further assessment.

MEMBER DOSMAN: So may I ask, in your view, is the urine sampling program appropriate and adequate?

MR. SANDLES: Although I haven't personally, but we have internal dosimetry experts who have reviewed their program and accepted it. On that basis, it has been accepted and approved by the CNSC and it does consistently provide both information on dose and

protection to the workers.

MEMBER DOSMAN: Madam Chair, another question relating to monitoring.

I note that in the Port Hope facility there's both lung and urine samples, and I note that here at Zircatec there's urine samples, but not lung samples, and I wonder whether Zircatec would like to comment on that issue?

MR. OLIVER: Andrew Oliver for Zircatec.

The design standard is that Zircatec works with only one chemical species of uranium which is uranium dioxide, so its behavior in the body is sort of set and you know how much is excreted, you know what it's coming from. Whereas the conversion facility has multiple forms of uranium, some of which are passed quickly through the body and some are not so they have a much more like confused picture -- or a more complex picture, I should say, of what is needed.

So that's why they -- their program has two different forms of monitoring and our's only has the one form of monitoring, a urine monitoring and both have been accepted by the CNSC Staff as adequate. If you want more detail, we can certainly provide it.

MEMBER DOSMAN: Thank you. I would like to ask CNSC Staff if you concur that lung sampling is not

required at Zircatec and if you can concur that the program is adequate?

MR. HOWDEN: Barclay Howden speaking.

Speaking on behalf of Staff, yes, we concur with that.

MEMBER DOSMAN: Thank you.

THE CHAIRPERSON: Further questions? Dr. Paquet, do you have a question?

MEMBER PAQUET: Yes. I referred to the Zircatec document, page 17 of 29, the last paragraph, the last three lines, this deals with the monitors for neutron detectors and it says:

> ".. one monitor that was above the detection limit was below the detection limit of 97% confidence, therefore it is likely that this monitor's positive reading is strictly statistical artifact and not a real exposure."

What do you mean by – it's a question of wording, but "statistical artifact"?

MR. LONGINOV: For the record, Mike Longinov.

Those are actually quoted from the consultant that we hired to do that. We hired a firm to

supply us with the neutron class with the neutron dosimeters. We deployed them. We submitted those dosimeters for analysis and in that consultant report, those are his exact words.

MEMBER PAQUET: Okay.

MR. LONGINOV: And further to that, the location of that that artifact occurred, is at a location that is actually at much lower -- much further away from any radar dosimeter that we have on site.

MEMBER PAQUET: Thank you.

THE CHAIRPERSON: Mr. Graham?

MEMBER GRAHAM: Just a question with regard to the overheads that were shown shows that the Staff of Zircatec do not wear uniforms. They do not wear coveralls or anything like that, I believe according to that. Can you confirm that, first of all?

MR. OLIVER: Andrew Oliver, for the record.

It's not quite correct. On the area where uranium is open, that is where there's pellet's powder or where there's pellets, they do wear coveralls and the companies supplies the rest of their clothing for that area as well so that they have -- they're not using their street clothes on the area where the uranium is opened.

On the other side of a barrier where we are dealing with zirconium tubes which contain uranium and the

uranium is sealed inside, then they can wear street clothes.

MEMBER GRAHAM: The reason I asked this is, what is the method of washing those clothes and so on and sampling the water and so on; does it just go into the sanitary sewer system and is there sampling in the sanitary sewer system afterwards as compared to the floor washings and so on, that was -- I was coming to the uniforms, are they washed and how are they are washed and how is the sampling done afterwards?

MR. LONGINOV: Mike Longinov, for the record.

As I already said earlier, all of the workers in the open source uranium area or pelleting area are required to wear company supplied coveralls. They remain onsite, they are laundered on-site by our facilities. That laundry water does go down the sanitary sewer.

We have recently put a sampler on there just to kind of get an idea as to what the levels are coming from that. Historically, we have a sewer sampling system in place which is directly at the t-junction between the Zircatec sewer and the town's main sewer line. We have been monitoring that for quite a number of years. We create a weekly composite every half hour, about a 20ml

sample is drawn and put into a weekly composite. That weekly composite is analyzed on a weekly basis for uranium and we also look at PH. The uranium concentrations are typically below the action level of .2PPM.

MEMBER GRAHAM: Question "B" is, do they ever exceed the action level?

MR. LONGINOV: Yes, we had incident where the action level has exceeded.

MEMBER GRAHAM: Thank you.

THE CHAIRPERSON: Any further questions? Well, thank you very much, Mr. Secretary.

MR. LEBLANC: This hearing is to be continued with Day-2 on November 29th and 30th, 2006 at the Town Park Location Centre in Port Hope.

The public is invited to participate either by oral presentations or written submissions on Hearing Day-2. Persons who wish to intervene on that day must file submissions by October 27th. 2006. The hearing is now adjourned to November 29, 2006.

THE CHAIRPERSON: This brings us to the close of the public hearings for today. Thank you very much for attending.

The hearing on the application by Cameco Corporation for the renewal of the Blind River licence will be scheduled for 8:30 a.m. tomorrow morning. Thank

you very much.

--- Upon adjourning at 3:58 p.m.