Canadian Nuclear Safety Commission

Commission canadienne de sûreté nucléaire

Public meeting

Réunion publique

August 17th, 2017

Le 17 août 2017

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

Salle des audiences publiques
14e étage
280, rue Slater
Ottawa (Ontario)

Commission Members present

Dr. Michael Binder
Dr. Sandy McEwan
Dr. Soliman A. Soliman
Dr. Sandor Demeter
Mr. Rob Seeley

Commissaires présents

M. Michael Binder
Dr Sandy McEwan
M. Soliman A. Soliman
Dr Sandor Demeter
M. Rob Seeley

Secretary:

Mr. Marc Leblanc

Secrétaire:

M. Marc Leblanc

General Counsel:

Ms Lisa Thiele

Avocate générale :

Me Lisa Thiele

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Ottawa, Ontario / Ottawa (Ontario)

--- Upon resuming on Thursday, August 17, 2017
at 9:02 a.m. / La réunion reprend le jeudi
17 août 2017 à 9 h 02

Opening Remarks

M. LEBLANC : Bonjour, Mesdames et Messieurs. Bienvenue à cette deuxième journée de la réunion publique de la Commission canadienne de sûreté nucléaire.

This morning as always we have simultaneous interpretation. Please keep the pace of speech relatively slow so that the interpreters have a chance to keep up.

Des appareils pour l'interprétation sont disponibles à la réception. La version française est au poste 2 and the English version is on channel 1.

Please identify yourself before speaking so that the transcripts are as complete and clear as possible.

En parlant de la transcription, celle-ci sera disponible sur le site Web de la Commission dans environ 10 jours.

I would also like to note that this proceeding is being video webcast live and that archives of these proceedings will be available on our website for a three-month period after the closure of the proceedings.

Please silence your cell phones and other electronic devices.

Monsieur Binder, président et premier dirigeant de la CCSN, va présider la réunion publique d'aujourd'hui.

President Binder...?

LE PRÉSIDENT : Merci, Marc.

Good morning and welcome to the continuation of the meeting of the Canadian Nuclear Safety Commission.

Mon nom est Michael Binder. Je suis le président de la Commission canadienne de sûreté nucléaire. Je vous souhaite la bienvenue, and welcome to all of you who are joining us via the webcast.

I would like to start by introducing the Members of the Commission.

To my right is Dr. Soliman; to my left are Dr. Demeter, Dr. McEwan and Mr. Seeley.

We already heard from our Secretary Marc Leblanc and we also have with us Ms Lisa Thiele, Senior

General Counsel to the Commission.

MR. LEBLANC: The *Nuclear Safety and Control Act* authorizes the Commission to hold meetings for the conduct of its business.

The agenda was approved yesterday. Please refer to the agenda CMD 17-M32.A for the complete list of items to be presented today.

Mr. President...?

CMD 17-M35/17-M35.A

Presentation from CNSC Staff

THE PRESIDENT: So the next item on the agenda is a decision item on the Regulatory Document REGDOC-2.2.4, Fitness for Duty, which is outlined in CMDs 17-M35 and 17-M35.A.

I understand before we get to staff's presentation that we have somebody joining us via teleconference. Mr. Harris, can you hear us?

--- Pause

THE PRESIDENT: Checking technology, always a good idea. Mr. Harris?

Mr. Harris is not with us?

MR. LEBLANC: No. I will inform you when he's on the line.

THE PRESIDENT: Okay. We will let you know when he joins us.

I understand that CNSC staff, it says here Ms Owen-Whitred, but that's not you, so go ahead, please.

M. LAMARRE : Bonjour, Monsieur le Président, membres de la Commission. My name is Greg Lamarre, I am the Director General of the Directorate of Safety Management.

With me today are:

Ms Karen Owen-Whitred, Director of the Regulatory Framework Division;

Mr. Brian Torrie, Director General of the Regulatory Policy Directorate;

André Bouchard, Director of the Human and Organizational Performance Division;

Lynda Hunter and Aaron Derouin, who are Human and Organizational Factors Specialists in Mr. Bouchard's Division.

In addition to the CNSC subject-matter experts, several consultants and specialists are with us today to support CNSC staff in answering some of the technical questions the Commission may have with respect to

fitness for duty.

So to my right, first let me introduce Dr. Albert Fraser. Dr. Fraser received his PhD in Biochemistry in 1976, is certified by the American Board of Forensic Toxicology as a Forensic Toxicologist, and is certified in Canada and the U.S. as a Clinical Biochemist and Clinical Chemist, respectively. Aside from his extensive scholarly record, most noteworthy is the fact that Dr. Fraser is trained as a Laboratory Inspector for the Substance Abuse and Mental Health Services Administration, or SAMHSA, and has conducted over 70 inspections of SAMHSA accredited laboratories in both Canada and the U.S.

Next to him, Mr. James Wigmore worked for over 29 years as a Forensic Alcohol Toxicologist at the Centre of Forensic Sciences in Toronto. Mr. Wigmore has testified in over 700 criminal cases throughout Canada in personal injury civil cases and coroner's inquests. In 2005, he was awarded the prestigious Derome Award from the Canadian Society of Forensic Science in recognition of outstanding contributions in the field of forensic science. He is also author of the book titled, "Wigmore on Alcohol".

Next to him, Dr. Ronald Davidson is a medical physician with extensive qualifications, training

and experience in occupational and aviation medicine, including 29 years of service to the Canadian Forces Medical Services. In 2005, Dr. Davidson, retired as Colonel in the Medical Branch of the Canadian Forces Medical Services and as a board-certified Aerospace Medicine Specialist. In his last military assignment he was the Medical Advisor to the Chief of the Air Staff and Aviation Medical Advisor to the Minister of National Defence.

As we move to the next row behind them, Dr. Amy Porath, Director of the Research and Policy Division at the Canadian Centre on Substance Abuse (CCSA) and is responsible for ensuring that the CCSA advances knowledge in the substance use field to inform policies and professional practice. In 2008, Dr. Porath received a PhD in Psychology and has focused her research program for the past 16 years on substance use issues, specifically in the areas of cannabis, drug-impaired driving, and the Drug Evaluation and Classification program.

Next to her, Ms Shawna Meister, M.A., is a Research and Policy Analyst with the Canadian Centre on Substance Use and Addiction (CCSA) and conducts research on Substance Use Affecting the Workplace and on Problematic Alcohol Use on Campuses. Prior to joining CCSA, Ms Meister

conducted research projects in Canada and the United States on human behaviour and road safety, including alcohol-impaired driving.

Finally, Dr. Doug Beirness currently serves as a Senior Research Associate with CCSA and is member of the Drugs and Driving Committee of the Canadian Society of Forensic Science. Dr. Beirness received his PhD in Psychology, specializing in alcohol studies. Throughout his career, he has participated in and has published numerous experimental and epidemiological studies in a variety of areas, such as drug and alcohol-impaired driving, the Drug Evaluation and Classification Program, and the perception of intoxication and impairment.

Also joining us via teleconference, at 10 o'clock I have been told, will be Mr. Paul Harris representing the U.S. NRC. Mr. Harris is currently the NRC's Senior Program Manager responsible for policy, rulemaking and guidance development associated with the drug and alcohol testing provisions in 10 CFR Part 26, "Fitness-for-Duty Programs."

And I am also aware that Mr. Harris will be supported by a number of other staff at the U.S. NRC as well as a number of experts from the U.S. Department of Health and Human Services, and they should all be on the

line we expect around 10 o'clock.

MR. LEBLANC: I think we already have Mr. Flegel and Mr. LoDico from the U.S. Department of Health on the line.

Can you confirm if you are on the line?

MR. LoDICO: Yes, we are.

MR. LEBLANC: Thank you very much.

MR. FLEGEL: Yes, thank you.

MR. HARRIS: And this is Paul Harris from the Nuclear Regulatory Commission and we are on the line as well.

MR. LEBLANC: Thank you very much, Mr. Harris.

MR. LAMARRE: Good news. I will now hand the presentation over to Ms Owen-Whitred.

MS OWEN-WHITRED: Thank you.

For the record my name is Karen Owen-Whitred, I am the Director of the Regulatory Framework Division.

We are here today to request that REGDOC-2.2.4, Fitness for Duty, be approved for publication and for use by CNSC staff in assessing the acceptability of licensee's fitness for duty provisions.

The origins of the project go back to

2009. At a Commission meeting following the publication of RD-204, Certification of Persons Working at Nuclear Power Plants, the Commission identified fitness for duty as an area that required additional clarity.

Before turning the presentation over to Monsieur Bouchard who will discuss the document in detail, I will briefly review where REGDOC-2.2.4 is situated within the CNSC's regulatory document framework.

To enhance accessibility of our regulatory expectations, the CNSC structures our regulatory documents according to the framework shown here. This slide shows where REGDOC-2.2.4 fits into the CNSC's broader document framework. We have highlighted section 2.2, Human Performance Management, as that is where this REGDOC resides.

Fitness for duty is going to be addressed in two different regulatory documents. The first part, REGDOC-2.2.4, Fitness for Duty: Managing Worker Fatigue, was published on March 21, 2017 and that topic is not included in this broader document. Together, the two REGDOC-2.2.4 documents will provide a thorough overview of the CNSC's regulatory expectations related to fitness for duty.

During today's presentation, CNSC staff

will identify the rationale for the REGDOC and its goals; provide and overview of the REGDOC's contents; and discuss how the REGDOC strengthens fitness for duty.

Staff will describe the public consultation process and also identify some key themes from the comments received. Of particular interest for stakeholders were provisions related to alcohol and drug testing, as well as medical and psychological evaluations.

The presentation will close with a short discussion on implementation, followed by staff's conclusion and our recommendation to the Commission to approve the REGDOC for publication.

REGDOC-2.2.4 requirements apply only to high-security sites, which is defined in the *Nuclear Security Regulations* as:

> "A nuclear power plant or a nuclear facility where Category I or II nuclear material is processed, used or stored."

Category I and II nuclear materials are defined based on the type of substance and the amounts of that substance present at a facility.

This slide outlines the locations of Canada's seven high-security sites. The types of

facilities and activities at these sites include operating nuclear power plants with their associated spent fuel management facilities at the Point Lepreau, Gentilly-2, Darlington, Pickering and Bruce sites, as well as operating research reactor and spent fuel management at the Canadian Nuclear Laboratories Chalk River site and spent fuel management at its Whiteshell Laboratories facility in Manitoba and the Douglas Point Facility on the Bruce site.

The REGDOC has been written to clarify the CNSC's position on fitness for duty and to provide associated clear, risk-informed and enforceable requirements that will support consistency in licensing and compliance activities across Canada. The REGDOC also clearly identifies the regulated population, including which requirements apply to which work groups.

The document contains requirements and guidance related to medical, psychological and occupational fitness of workers at high-security sites, as well as alcohol and drug-related aspects, including testing. The document will provide regulatory clarity, strengthen the fitness for duty regulatory framework and ensure that the fitness for duty of workers is managed for the purposes of nuclear safety and security. The document is consistent with the International Atomic Energy Agency, or IAEA,

expectations to have nuclear facilities address fitness for duty.

I would now like to turn the presentation over to Monsieur André Bouchard.

MR. BOUCHARD: Thank you, Karen.

In moving forward with the Commission instruction to bring clarity around fitness for duty, staff defined fitness for duty as:

> "A condition in which workers are physically, physiologically, and psychologically capable of competently and safely performing their tasks."

This broad definition encompasses all aspects of fitness and describes the purpose of being fit as one of the elements that supports worker performance.

It is important that a comprehensive approach capturing all five elements of fitness for duty risks be established.

On the left, with the box framed in green, are risks related to fatigue. This risk is addressed in the newly published REGDOC-2.2.4, Managing Worker Fatigue, and will not be discussed, as we said earlier, here today.

The proposed REGDOC-2.2.4, Fitness for

Duty, presented here today addresses the box framed in blue, capturing the four remaining risk elements: medical, psychological, occupational fitness, and alcohol and drug usage.

Together these two REGDOCs will form comprehensive requirements addressing all risks that are part of fitness for duty in an effort to reduce the likelihood of human error that could be caused by potentially unfit workers.

The next slide provides a representation of how fitness for duty is assessed.

To assess fitness for duty it is important to have a clear fitness for duty assessment framework.

The left vertical portion of this figure represents the components of a comprehensive fitness for duty assessment framework.

On the horizontal lower portion of this figure are the circumstances in which a fitness for duty assessment may be conducted and range from pre-placement to random.

Any fitness for duty component may be combined with a specific circumstance to define the assessment approach adopted. For example, an applicant can be subject to a pre-placement medical assessment.

The outcome of a fitness for duty assessment will be a determination of whether the worker is fit, fit with work restrictions, or unfit. This determination may be permanent or temporary.

Details regarding the components and circumstances included in the regulatory document will be covered later in the presentation.

In order to prevent unreasonable risk to the safety and security of nuclear workforce, the public and the environment, comprehensive fitness for duty assessments are needed to manage risks associated with fitness for duty.

This slide provides an overview of the provisions of the *Nuclear Safety and Control Act* and its regulations that provide the legal basis related to fitness for duty.

As you will see later in the presentation, the CNSC's legal basis was raised as a key concern during the consultation process.

As indicated in the *Nuclear Safety and Control Act*, an object of the Commission is to regulate the nuclear industry in order to prevent unreasonable risks. As such, the Commission may establish classes of licences and will not issue a licence unless, in the opinion of the

Commission, adequate provisions are made.

A licence may contain any terms or conditions that the Commission considers necessary for the purpose of the Act.

Furthermore, the *General Nuclear Safety and Control Regulations* require licensees to ensure the presence of a sufficient number of qualified workers. In order for these workers to perform their work competently and safely, they must be fit.

The *Nuclear Security Regulations*, as part of the authorization process for Nuclear Security Officers, requires medical, psychological and physical fitness assessments. Certificates must certify that the person is able to perform their task.

Finally, a licence condition already exists for licensees to have a Human Performance Program in place. The current REGDOC would be one of the measures under the Human Performance Program.

But what measures are in place now?

High-security site licensees have implemented fitness for duty measures for many years.

The CNSC has had a number of requirements and guidance in place as well. However, some of these requirements were high level and needed further details.

G-323, which is Minimum Shift Complement, and RD-204, Operator Certification, contain requirements and guidance for licensees to have a fitness for duty program in place. However, both documents do not describe in detail what are fitness for duty programs and what they include.

Detailed requirements are specified in the CSA N293, Fire Protection for Nuclear Power Plants, which includes fitness requirements for emergency responders.

In addition, specific fitness for duty requirements currently exist in two documents: RD-363, which applies to Nuclear Security Officers, and REGDOC-2.12.1, which applies to Nuclear Response Force members.

And of course REGDOC-2.2.4, Managing Worker Fatigue, was recently published and addresses fatigue management.

If REGDOC-2.2.4, Fitness for Duty, is approved for publication, the existing regulatory documents listed on this slide will be updated to reference the Fitness for Duty REGDOC where appropriate.

It should be noted that the entire content of RD-363 for Nuclear Security Officers, related to their fitness for duty, has been amalgamated into the proposed

regulatory document. Therefore, RD-363 will be superseded by the Fitness for Duty REGDOC once it is fully implemented.

With all these requirements, one could ask: What is the rationale for bringing forward a Fitness for Duty REGDOC now?

Workers are key contributors to the safety and security of nuclear facilities. Recognizing this, the CNSC requires licensees to implement and maintain human performance programs.

These programs address a broad range of factors that affect human performance, with the aim of minimizing the potential for errors that could affect nuclear safety and security.

Fitness for duty is one of the factors that can impact a worker's performance. Therefore, risks associated with fitness for duty must be managed.

The CNSC has a proactive regulatory approach, which means that it addresses potential issues before they cause events or accidents.

Following this approach, staff is proposing a RegDoc that addresses all elements of fitness for duty, with the objective of supporting workers to perform their duties safely.

Last but not least, the proposed RegDoc will provide transparent, consistent and risk informed requirements that amalgamates, clarify and update existing requirements.

To support international best practices, peer review missions are organized by the IAEA to assess its country members against best practices. In the recent past, Canada was the host of three of these peer missions, the two listed on the slide as well as an operation safety review team mission at Pickering in 2016.

As a result of these missions, Canada received a recommendation pertaining to fitness for duty, more specifically for random alcohol and drug testing to be performed.

The proposed Regulatory Document is consistent with these expectations and recommendations, taking into account the Canadian legislative context.

I will now turn the presentation over to Lynda Hunter.

MS HUNTER: Thank you, André.

Good morning. My name is Lynda Hunter. I'm a Human and Organizational Factors Specialist with the Human and Organizational Performance Division.

In developing the content of RegDoc 2.2.4,

Fitness for Duty, CNSC Staff gathered input from a wide range of consultants and specialists, many of whom are participating today. This slide contains a list of the sources of this input, which was considered by Staff in both the approach taken and some technical content in the Regulatory Document.

Key advice was received from occupational medicine specialists, toxicologists, alcohol and drug policy specialists, exercise physiologists as well as experts from the health -- from Health Canada and the Canadian Human Rights Commission.

Staff also consulted various other sources and reviewed a large amount of scientific literature.

Several reports were commissioned by the CNSC. A list of these reports can be found in the appendix slide at the end of this presentation.

Staff are confident that the Regulatory Document has a strong scientific foundation.

In addition to expert advice, CNSC Staff conducted extensive benchmarking. Detailed results are discussed later in the presentation.

Staff collected data regarding nuclear practices internationally as well as data on other safety sensitive industries in Canada. Key information interviews

were conducted as well as policy reviews, literature searches and case law reviews.

International expectations were also reviewed. The IAEA has expectations related to fitness for duty in many documents. The proposed Regulatory Document is consistent with these expectations.

These include the need for policy statements on fitness for duty, for medical assessments to be conducted at recruitment and periodically for operations staff, having a program to identify workers with a tendency toward drug and alcohol abuse, and behavioural observation.

As domestic and international practices continue to evolve, Staff revisited benchmarking data several times throughout the consultation process.

Staff has consulted extensively on this Regulatory Document. Public consultation occurred in two phases.

Engagement on fitness for duty began in 2012 with the public consultation on discussion paper DIS-12-03, Fitness for Duty: Proposals for Strengthening Alcohol and Drug Policy, Programs and Testing.

The discussion paper presented CNSC's broad view of fitness for duty, and included specific proposals for alcohol and drug policy, programs and testing

requirements.

The CNSC received 44 submissions from a variety of stakeholders totalling over 300 pages. A "What we heard" report was published in the fall of 2013.

While RegDoc 2.2.4, Fitness for Duty, was being developed, CNSC staff continued to engage stakeholders. Presentations were made to a variety of forums, including as part of the CNSC 101 sessions, which are used to educate the public on the CNSC's robust regulatory framework, program and activities.

A draft version of RegDoc 2.2.4 was issued for public consultation in November 2015.

In total, the CNSC received 26 submissions from unions, licensees, third party experts, testing companies, industry associations, the general public and the Canadian Human Rights Commission amounting to 325 pages of comments.

In addition, all stakeholders who submitted comments were invited to further discuss any remaining areas of concern or clarification. Teleconferences were held with several licensees, unions and testing companies.

Staff gained a better understanding of stakeholder positions, and all comments were carefully

considered. Staff are confident that sufficient and meaningful stakeholder consultations have occurred.

The next slide provides an overview of key stakeholder comments.

The four key concerns raised were the need for a Regulatory Document on fitness for duty, the legality of random and pre-placement alcohol and drug testing, some specific technical aspects of the assessment process and alcohol and drug testing methodologies, and, finally, the worker population subject to psychological and medical assessments was an area of concern.

The next four slides will go through these in detail.

The first concern that emerged during public consultation is that licensees and unions questioned the need for a Regulatory Document and stated that existing measures in place were adequate. Concerns were also raised regarding implementation, stating that implementation may take many years of union negotiation and litigation.

CNSC Staff's position remains that the oversight of fitness for duty requires strengthening. This initiative is part of the CNSC's continual improvement of its regulatory framework, and the CNSC does not wait until events occur to act to strengthen an area important to

safety.

Having a strong fitness -- having strong fitness for duty provisions in place reduces the risk of human performance failures and ensures that expectations related to fitness for duty are transparent, consistent and enforceable.

CNSC staff acknowledge that there may be implementation challenges which will likely implement -- sorry, impact the implementation period.

The second concern, unions and licensees expressed concern regarding the legal basis for random and pre-placement alcohol and drug testing, and indicated human rights and privacy rights may be violated.

With respect to the legal basis, CNSC staff's response is that the *Nuclear Safety and Control Act* provides a clear legal basis for the Commission to set licence conditions and to require any term or condition that the Commission considers necessary to prevent unreasonable risk to the environment and to the health and safety of persons.

Based on comments received and in consideration of the balance between nuclear safety and security and human and privacy rights, the population of workers subject to random and pre-placement alcohol and

drug testing has been considerably reduced from all with unescorted access proposed in the discussion paper to only a sub-set of workers with the most direct and immediate impact on safety. A description of these workers will be provided later in the presentation.

This change is in line with comments received from the Canadian Human Rights Commission, which emphasized the importance of limiting alcohol and drug testing to workers in safety sensitive positions. Furthermore, additional information on privacy and the employer's duty to accommodate workers was also added to the Regulatory Document in response to comments received.

With respect to the third area of concern, a variety of stakeholders raised concerns regarding some of the technical aspects of the assessment processes and testing methodologies. To address comments, several changes were made to the Regulatory Document in consideration of best practices and expert advice. For example, clarity was added regarding the outcome of workers who test positive for alcohol and drugs.

The Regulatory Document now clearly states that workers shall be removed from safety sensitive duties and referred to a mandatory substance abuse evaluation.

In addition, some minor changes to the

list of drugs and thresholds were made based on Canadian practices, and clarity was added to the glossary of terms.

In the fourth and final area, stakeholders raised concerns that the scope of psychological and medical assessments is too broad. Stakeholders stated that they support the current obligation to assess security staff, but do not believe expanding it to other roles would demonstrably improve existing fitness for duty programs.

With respect to psychological assessments, recent data indicates that 20 to 30 percent of Canadians will experience mental health illness in their lifetime. Given that psychological assessments are to be tailored based on job performance requirements and are commensurate with the roles and responsibilities of each work group, CNSC staff's position remains that psychological assessments are reasonable measures to ensure nuclear safety.

In addition to existing security personnel, psychological assessments would be limited to certified staff pre-placement or for cause when a mental health concern is suspected or identified.

Medical assessments would be expanded to safety sensitive positions. Given that safety sensitive positions are those workers where impaired performance

could result in a significant incident, CNSC staff believe this to be reasonable and is consistent with domestic and international practices.

In summary, extensive stakeholder consultation has occurred throughout the development of REGDOC 2.2.4, Fitness for Duty. The consultation was significant and stakeholder comments were carefully considered and resulted in significant changes to the regulatory document where appropriate. For example, the population of workers subject to random alcohol and drug testing was substantially reduced.

We will now turn to the content of the regulatory document. The regulatory document includes programmatic requirements which are in-line with licensee management systems.

These program elements are also consistent with those contained in the managing worker fatigue regulatory document. They include the requirement for licensees to have:

Fitness for Duty policy statements, a program and processes to manage Fitness for Duty with clear authorities, accountabilities and responsibilities, and a requirement for licensees to assess and strive to continual improvement their Fitness for Duty program.

In addition, supervisory awareness, and peer observation and reporting is included. A supervisory awareness program is already required under the *Nuclear Security Regulations.*

In its correspondence to the CNSC, the Canadian Human Rights Commission emphasized the importance of "including a focus on employee support programs in its proposal including worker awareness and education, supervisory awareness, and employee assistance programs." Each of these measures have been included in the REGDOC. Staff's position is that these non-punitive measures to support workers are key elements of an effective Fitness for Duty program.

Similar to the Managing Worker Fatigue regulatory document, this regulatory document takes a graded approach to the requirements that apply to workers at high-security sites, depending on their potential impact on safety and security.

As can be seen in the graphic on the right, the largest circle represents the "broad population" that is those workers with the potential to pose a risk to nuclear safety or security. This population is estimated at approximately 12,000 workers. It should be noted that this estimate of number of workers -- all of the estimates

of workers on the slide are very approximate and based on nuclear power plant data which represents approximately -- which represents, sorry, five of the seven sites.

The medium circle represents a smaller set of workers occupying safety-sensitive positions, that is, those workers whose impaired performance could result in a significant incident. These include certified staff, some security, minimum staff complement and any other safety-sensitive positions identified by licensees using a risk-informed analysis. This population is estimated at approximately 4,500 workers or 3,700 -- sorry, 37 percent of the broad population.

And the smallest circle represents a small subset of the safety-sensitive positions which have the most direct and immediate effect on safety and security, estimated at 900 workers or 8 percent of the broad population.

The requirements are graded in that the level of prescription varies with the most prescriptive measures, that is pre-placement and random alcohol and drug testing being limited to the smallest number of workers, commensurate with risk.

The next few slides will describe the requirements associated with each of these worker

populations in more detail.

For the largest population of workers, licensees are required to manage the fitness for duty of workers through the program elements in their management system. For these workers, the regulatory document does not require specific assessments or tests. But rather, licensees are required to have measures in place that address the full set of fitness for duty risks.

We will now turn to an overview of requirements applicable to safety-sensitive positions. In addition to program elements, licensees would be required to identify medical, psychological, and occupational fitness requirements for safety-sensitive positions. These would be based on the worker's job performance requirements. However, the CNSC has already identified some work group-specific assessments and tests that would be required. Medical, psychological and occupational fitness assessments and tests included in the regulatory document are existing requirements for nuclear security officers and have been expanded in some cases to other workers in safety-sensitive positions. These assessments would be job specific and based on job performance requirements. There are also new requirements pertaining to alcohol and drug testing and substance abuse

evaluations.

I will now turn the presentation over to my colleague, Aaron Derouin, who will go through the specific assessments and tests required by work group.

MR. DEROUIN: Thank you, Lynda.

Thank you, Lynda.

My name is Aaron Derouin and I am a human factors specialist within the Human and Organizational Performance Division.

Currently, medical assessments are requirements for select nuclear security positions, such as Nuclear Security Officers.

In addition, emergency response team members are required to meet medical requirements in N293, "Fire Protection for Nuclear Power Plants". The draft regulatory document proposes to expand the requirement for medical assessments to all other safety-sensitive positions. These would be conducted pre-placement, periodically at intervals defined by the licensee, and for cause under reasonable grounds conditions.

The requirement to extend medical assessments to all safety-sensitive positions beyond nuclear security and emergency response teams was based on occupying a safety-sensitive position at a high-security

nuclear facility and on benchmarking. Given that these assessments are to be tailored according to the worker's job performance requirements, it is staff's position that the requirement to be medically assessed at pre-placement and periodically is reasonable, given that these workers hold safety-sensitive positions and by definition are those workers where impaired performance could result in a significant incident at a high-security nuclear facility.

With respect to benchmarking, the IAEA expects that pre-placement and periodic medical assessments are conducted for all operations staff. Transport Canada has stringent requirements for medical assessments that are defined for each mode of transportation. Additionally, the U.S. NRC requires medical examinations for some positions including certified staff.

At the present time, psychological assessments are required for select nuclear security positions including nuclear security officers and nuclear response force members.

Draft regulatory document 2.2.4 proposes to expand the requirement for pre-placement psychological assessments to certified staff only.

For-cause reasonable grounds psychological assessments would only be conducted on safety-sensitive positions if a

mental health concern is suspected. In addition, psychological assessments would be required for security personnel that have access to weapons, if away for more than six months.

In terms of benchmarking, the US NRC requires psychological assessments for all workers with unescorted access.

At the present time, occupational fitness assessments or physical fitness tests are required for nuclear security officers and the NRF or nuclear response force. Currently for emergency response team members, N293 specifies that industrial fire brigades or fire protection workers have the physical fitness to meet the demands of the job.

Draft REGDOC 2.2.4 proposes to expand reasonable grounds in a for-cause circumstance, physical fitness testing to nuclear security officers and the NRF or nuclear response force if a supervisor suspects that the worker is not capable from a physical fitness perspective of performing the job.

The draft document also updates the physical fitness requirements specified in RD-363 to match current job performance requirements, taking into consideration an update to the physical demands analysis

and changes or modifications to equipment.

The current and proposed physical fitness testing requirements are aligned with the requirement for law enforcement officers and first responders in Canada to meet physical fitness standards.

In the next several slides we will focus specifically on alcohol and drug testing. The proposed alcohol and drug testing requirements are new. Many of the processes proposed in relation to alcohol and drug testing in the draft REGDOC were developed based on expert advice from two forensic toxicologists and in consultation with other specialists from Health Canada and the Canadian Centre on Substance Abuse.

The draft regulatory document proposes that all safety-sensitive positions be required to submit to reasonable grounds testing primarily based on supervisors' observations, post-incident following a significant incident, follow-up testing after a worker has been confirmed as substance dependent and return-to-work testing prior to the substance dependent worker being reinstated to safety-sensitive duties.

Based on a graded, risk-informed approach and in consideration of comments received from stakeholders the proposed worker population that would be subject to

pre-placement and random alcohol and drug testing has been substantially reduced. Only CNSC certified staff, as specified in RD-204, and nuclear response force members will be subject to these circumstances of testing as these positions, based on their job performance requirements, have the most direct and immediate impact on nuclear safety and security.

For clarification, pre-placement testing is typically conducted as part of the conditions of an applicant prior to hire or when transferring to a safety-sensitive position. And random testing occurs on an unannounced basis.

The regulatory document proposes to test 25 percent of this subset of workers on an annual basis. CNSC staff are confident that the restriction of random testing to the most safety-significant positions at Canada's high-security nuclear facilities strikes the right balance between respecting human rights and privacy and strengthening nuclear safety and security.

In the summary slide, the proposed regulatory document builds on existing requirements and practices already in place for fitness-for-duty assessments. Medical, psychological, and occupational fitness requirements have been in place for some years now.

The proposed REGDOC for these components only extends the worker population to a larger group of safety-sensitive positions.

The proposed alcohol and drug testing requirements represent a new component within the CNSC's regulatory framework as detailed in draft REGDOC 2.2.4 Fitness for Duty.

Finally, behavioural performance observation has been a requirement in the nuclear security regulations for a long time and is an existing practice of licensees. Behaviour observation represents an essential component of a comprehensive approach to fitness for duty.

The objective of this slide is to provide some perspective on current practices in Canada with regard to alcohol and drug testing. Since the 1990s, the United States Department of Transportation, or US DOT, established fitness-for-duty requirements for Canadian motor carriers travelling into the United States. These Canadian drivers are subject to all circumstances of alcohol and drug testing, including random and pre-placement testing.

Recently, the Toronto Transit Commission has implemented a full set of alcohol and drug testing requirements, including random and pre-placement testing, for approximately 10,000 workers.

The table also includes other employers in various Canadian industries that have included testing as part of their policies and programs.

Based on results from a survey conducted by the Canadian Centre on Substance Abuse on behalf of the CNSC, 55 percent of the 73 respondents from Canadian workplaces conduct some form of alcohol and/or drug testing, with 12 percent of respondents indicating that they perform random testing of safety-sensitive positions.

From the literature, the main reasons that employers may wish or want to establish a drug-testing program are to minimize the likelihood of industrial accidents and to deter drug use in the workplace.

As highlighted in a previous slide, three international peer-review missions to Canada have provided recommendations that Canada do more to strengthen fitness for duty, specifically with respect to alcohol and drug testing. The basis for these recommendations were good international practice.

Internationally, random alcohol and drug testing is practised in various countries. Some countries have regulatory requirements that require testing, while in other countries it is the nuclear operators themselves that have adopted random testing as a good practice. Some

countries require that all workers with unescorted access or site access be subject to random testing. These two types of access are generally the same as they refer to a broad population of workers that do not require an escort to access protected areas of the nuclear facility.

In addition to the benchmarking provided on the previous slides, positive test data available from the US NRC and Canadian-based alcohol and drug testing statistics are insightful. The figure on the right is data from the US NRC from the years 1990 to 2013 as displayed on the *X*-axis with the percent positive test rate displayed on the *Y*-axis. All testing circumstances are presented from pre-placement to post-event.

Two things are evident from this figure. First, the green line indicates over the last 22 years that there has been a significant decline in the positive test rate in for-cause testing circumstance. This is testing that occurs when there are reasonable grounds to believe a worker may be impaired. Second, all other positive test rates included are relatively stable, with random rates approximately at 0.3 percent.

Despite the fact that positive test results for random have been stable, 19 percent of all positive tests were recently identified in 2013 through

random testing. Taken together, these data support the need for a comprehensive approach that includes all forms of alcohol and drug testing.

In this graph we present Canadian industry data provided by one of the largest third party testing providers in Canada. The red bars in the figure represent the percent positive random test rate data for Canadian-based drivers who must meet the US Department of Transportation regulations, which are labelled as D-O-T or DOT.

The blue bars represent other Canadian workers or Canadian industry workers that are not required to meet US regulations and are referred to here as non-DOT.

The most noticeable difference is that the non-DOT workers in Canada have substantially higher random positive test rates compared to Canadian drivers that are subject to US DOT regulations. While these differences may be attributed to many factors, it is evident that regulated industries have much lower random test rates.

In the US, all Department of Transportation agencies use a one percent positive test rate for random as a performance indicator, as indicated by the black dashed line on the graph. This is used to determine whether or not to modify the sampling rate for

the random test pool. The sampling rate may be reduced if this rate is below one percent for two years, or increased if above one percent. For example, the US NRC initially tested a hundred percent of their workers and reduced their sampling rate to 50 percent in 1994, as illustrated on the graph using the green line.

This slide and the next are meant to present data on the most frequently used drugs in the US and Canada. This graph presents US NRC positive test data with the *X*-axis again from years 1990 to 2013. The *Y*-axis is the percentage of positive tests by substances tested. As indicated by the blue line, marijuana is the most commonly used drug and accounts for approximately between 55 and 73 percent of all positive drug tests in the US NRC's workforce. A distant second is cocaine, represented by the green line. These are followed by amphetamines, opiates, and PCP.

This graph of data from one of Canada's largest testing providers again shows the same trend in Canada, as shown in the previous US NRC slide, with the highest percentage of positive tests for marijuana followed by cocaine. Data is presented for both Canadian DOT regulated workers and non-DOT workers from 2011 to 2015.

In Canada, data from the Canadian Tobacco,

Alcohol, and Drug Survey indicates that the reported use of marijuana by Canadians has increased from 11 percent in 2013 to 12 percent in 2015, and this is anticipated to increase with the legalization of marijuana. A recent survey indicated that 83 percent of respondents from various Canadian employers with more than 500 employees are very concerned with respect to the potential impact of marijuana legalization on workplace safety.

This slide provides some insights into the potential impacts of medical and recreation use of marijuana. In Canada, data over the last few years indicates that medical marijuana use is on the rise, which is partly due to changes to legislation surrounding medical access. In addition, the general public's perceived risk of harms associated with marijuana use is decreasing. With the legalization of marijuana for recreational use scheduled for next year, it is important that we draw on lessons learned from other jurisdictions where marijuana has been legalized.

To look into potential impacts of legalization, CNSC staff have established a memorandum of understanding with the Canadian Centre on Substance Abuse, or CCSA. The CCSA examined the experience of two states within the US, Colorado and Washington, that have legalized

marijuana for recreational use in 2012. The CCSA findings suggest that the legalization of marijuana is associated with increased use. To balance this risk, the onus is on employers and regulators to ensure a safe workplace by taking all and every reasonable measure or precaution to ensure safety.

It is estimated that approximately 10 to 13 percent of Canadians use or abuse drugs. It is therefore prudent that employers, particularly those in safety-sensitive industries, address drugs of abuse that are known to be impairing as these can have an impact on safety, whether legal or illegal.

With respect to other regulators in Canada, Transport Canada considers the use of marijuana, whether or medical purposes or not, to be disqualifying for safety-sensitive positions. According to Transport Canada, abstinence of four to six weeks would be required prior to a pilot being considered as fit for duty. And for rail workers in safety-critical positions, the presence of marijuana in the body renders the worker unfit.

CNSC staff's position is that given potential impacts of these societal changes, a proactive approach must be taken to strengthen the oversight of fitness for duty.

I will now pass the presentation back to Karen, who will discuss the implementation of the regulatory document.

MS OWEN-WHITRED: If approved, REGDOC 2.2.4, Fitness for Duty, will be published on the CNSC's website following the Commission's decision. Upon this publication, REGDOC 2.2.4 will be added to the Recommendations and Guidance section of the applicable licence conditions handbooks, commonly referred to as LCHs.

CNSC staff continuously engage with licensees on the implementation of REGDOCs and as such would require the submission of implementation plans and associated timelines specific to REGDOC 2.2.4 by all applicable licensees. The implementation plan would drive the transition of REGDOC 2.2.4 from recommendations and guidance to compliance verification criteria. The target date for implementation would be captured in the compliance verification criteria in the LCH.

CNSC Staff will monitor licensees' implementation during ongoing regulatory oversight activities and update the Commission annually on the status of REGDOC implementation via the regulatory oversight reports.

In summary, the CNSC has taken a proactive

approach to ensure nuclear safety and security. The REGDOC was developed through extensive research, expert advice, and multiple consultations with stakeholders. In combination with the managing worker fatigue document, the REGDOC addresses all components and circumstances of fitness for duty.

Stakeholder feedback was carefully reviewed and changes were made to the document in full consideration of considered risks, science and benchmarking. CNSC Staff believe that the REGDOCs graded approach finds an appropriate balance between human rights and nuclear safety and security.

As part of the continual improvement of the CNSC's regulatory framework this regulatory document will ensure that requirements and guidance related to fitness for duty, including alcohol and drug testing, are transparent, consistent and documented. The regulatory document would also fulfil international expectations and recommendations pertaining to fitness for duty and alcohol and drug use.

Specifically, REGDOC-2.2.4 strengthens and modernizes the CNSC's fitness for duty regulatory oversight, balances relative risks posed by various facilities and work positions with measures to ensure

fitness for duty is effectively managed, improves clarity of CNSC expectations and provides a consistent basis for licensing and compliance, and takes a non-punitive approach by including supportive measures for workers and emphasizes the duty to accommodate.

Based on the contents of this presentation and of the extensive work and consultation that has gone into developing the document, CNSC Staff believe that REGDOC-2.2.4, Fitness for Duty, is ready for final approval and publication with one minor change, namely the exclusion of certified health physicists from the pre-placement and random alcohol and drug testing worker population.

Thank you for your attention, and we remain available to answer any questions you may have.

THE PRESIDENT: Thank you. Well, before we get into the question period, I think it would be useful, after those three or four years of consultation, to hear where industry is on this proposal.

So I understand that there's some industry representatives here that would like to share with us their view.

MR. MANLEY: Thank you, President Binder, Commissioners. My name is Robin Manley, I'm the Vice-President of Nuclear Regulatory Affairs and

Stakeholder Relations at Ontario Power Generation, for the record.

As you can see, other representatives from the high-security facilities are here as well, and they may wish to expand on any of the remarks that I make or clarify them.

I'd like to make some general comments on behalf of industry and provide the Commission with some suggestions pursuant to the proposed REGDOC on how we believe it could be improved in order to more successfully meet the intent of the REGDOC.

We would like to recognize that the CNSC Staff have indeed listened to industry as well as other stakeholders and our input and, particularly, by focusing the scope of the random testing to the most safety-critical personnel.

First off, I'd say that in terms of safe operation of the nuclear power plants we obviously, as the operators of these facilities, recognize and support the importance of staff being fit for duty, particularly the certified control room staff and the armed nuclear response force.

We have existing processes in place today and we have staff here today which could expand on what

those are to require continuous evaluation of the fitness for duty of all our personnel to ensure the safety today in the plants. Testing is another layer of defence.

In terms of implementation, licensees are prepared to implement the requirements that are established by the Commission of course as conditions of our licence. We particularly identify the importance of the random testing for the safety-critical personnel and the post-incident for cause testing. The majority of the benefit through this REGDOC is in the implementation of the requirements for those most safety-sensitive personnel. Again, the certified control room staff and armed security staff.

We believe that the success of this program and its implementation against legal challenges and arbitration increases if we limit the implementation to that population. In particular, the legalization of marijuana next year, assuming it goes forward, can implement on the implementation. We believe that there's a problem here in terms of the inability to test for impairment.

Obviously, there are experts here today who can speak to testing for presence in the body, impairment, et cetera, et cetera. I would obviously offer

that they would speak to that more knowledgeably than any of us could today, but we foresee that that would be a challenge.

We believe that the federal government could address this challenge through how the legalization is established or the CNSC could through addressing it in the Regulations rather than in a REGDOC, and that is to have a zero tolerance for the safety-critical personnel.

The other requirements, other than the for-cause post-incident testing and other than the random testing for the safety-critical personnel, those other requirements are less safety significant. Therefore, we recommend that in order to maximize the success of the implementation and limit the scope of the issues to be managed we focus on those safety-critical personnel. I could expand further if you wish on what we mean by the details of that.

So, as I said, we propose that the implementation would be on the random testing of the most safety-sensitive personnel; the certified control room and armed nuclear response force, as well as post-incident for-cause testing as per the REGDOC. We recommend strengthening the legislative basis, particularly with respect to legal drugs.

In conclusion, industry supports ensuring staff are fit for duty, including the highest standard for the certified control room and NRF staff. We recommend you narrow the requirements to the most critical staff to ensure a compelling case is made and provide a measured approach to implementation.

As CNSC Staff identified in the presentation, we've identified that the implementation of the REGDOC will take a substantial period of time, discussions with our workers and unions, and with the CNSC on the implementation details. We believe that this may be the most difficult REGDOC to implement in our history, however with a few changes, the timeliness, and success of the implementation can be improved.

Thank you, and we look forward to any questions you have.

THE PRESIDENT: Thank you. Anybody want to add anything to that?

MR. SAUNDERS: Frank Saunders, for the record.

You know, I think -- I mean, we support that approach. I think it's important to point out, although it's been mentioned a few times, especially the drug and alcohol testing, it's really just an oversight

process. It provides some kind of confirmation that your current programs are working and, in fact, it does not ensure that the people who are working today on shift are actually fit for duty.

It only demonstrates that the program you have to make sure they're fit for duty is actually working and that there's no hidden issues behind the scenes.

So I think it's important for people to understand that in the public domain it's not about whether our programs work. We already have programs that are pretty effective. We have no demonstrative problems that we can see, but this would add an extra layer of public confidence that those programs are indeed effective, and that's the purpose it serves.

THE PRESIDENT: Thank you. So I'd like to open up the floor here, and let me start with Dr. McEwan.

MEMBER McEWAN: Thank you, Mr. President. I'm going to start with a couple of fairly generic questions, if that's okay.

In the presentation for slide 14, you said that a large amount of scientific literature was reviewed. Yet, in neither the presentation nor in any of the paperwork that we got is there any evidence of that review. There's no literature, there is no analysis of what that

literature says.

If I look at the slides where you show relative data on use so, for example, slide 36, slide 37 and slide 38, there are no references to those curves and, indeed, the way in which the graph is presented gives me no idea of what the colour lines at the bottom of that graph are.

So the problem I've got with this is although you say you've reviewed the literature, this is actually an evidence-free document.

MR. LAMARRE: Greg Lamarre, for the record.

I'll pass the question on to Lynda Hunter in a minute. Just to summarize the fact that over the last number of years extensive literature review has been done. I think it's a question of how you can package the extent of literature review. In addition to the third-party reports that are explicitly mentioned within the slide deck, how you can package that all together and not make a tome of material here, but still provide a comprehensive picture.

But I think Lynda Hunter can provide a lot more information in terms of the extent of literature review, how many types of documents have been reviewed.

And perhaps, if needed, our colleagues from CCSA could also add some weight to this.

MS HUNTER: Yes, Lynda Hunter for the record.

Just to amplify what Greg mentioned, it's very difficult to package the enormity of material that we've reviewed, that staff have reviewed.

As indicated in the Appendix slide, there have been independent reviews on various topical areas: the urine analysis area, alcohol, toxicology area, medical reviews, et cetera, et cetera.

We've had an alcohol and drug policy expert who has summarized existing legal cases, as well as literature, to support the fact that drugs impair workers, for example, et cetera.

We've also done significant internal reviews, staff has literature reviews on various different topics that we've done that aren't necessarily contained in this package.

MEMBER McEWAN: So, you still haven't answered my question. If I'm reading the documentation that I've got there is no evidence. And I really think that if we're going to be a science-based organization, you have to give us more data than you have given us that is

accessible.

MS HUNTER: Yes. Staff would be prepared to provide the Commission with a list of reference material afterwards, we'd be happy to provide that to the Commission for review.

MEMBER McEWAN: But it would have been helpful. I mean, you know, I spend my life reviewing scientific literature, I'm capable of reviewing summaries and I was particularly upset that I didn't see any reference to slides 36, 37 and 38. It's simply a data dump with no reference to where the source data came from.

MR. DEROUIN: Aaron Derouin for the record.

In respect to the data on slide 36, I'll speak to that. So, we used third-party provider data that was provided by DriverCheck through various emails. So, that's data that we've aggregated together with U.S. NRC and other data to make some comparisons.

With respect to U.S. DOT, a one per cent positive test rate, that is taken from one of the Code of Federal Regulations, for example, Section 49 CFR, Code of Federal Regulations, Part 219.602. It states that:

> "...the minimum annual percentage rate for random testing is 50 per

> cent...and...the Administrator may lower this rate to 25 per cent of all covered employees if the Administrator determines that the data received under the reporting requirements for two consecutive calendar years indicate the reported positive rate is less than 1 per cent." (As read)

In regards to slides 37 and 38, this is data also taken from U.S. NRC. U.S. NRC on a yearly basis will aggregate all the previous testing results for that year and provide a summary report. So, we do have that summary report available.

And, as well, Paul Harris, the Fitness for Duty Program Manager is on the phone and he can speak to any of the data that's presented on these slides.

MEMBER McEWAN: Okay. That will be helpful, but -- so, those data on those slides are published, they are findable?

MR. DEROUIN: Correct, they're available freely on the U.S. NRC website.

MEMBER McEWAN: So, why didn't you give us the website as a reference?

MR. BOUCHARD: So, we'll make sure that we organize and provide the data -- Andre Bouchard for the record, sorry -- and we'll make sure that we get that kind of data from our sources because these data, especially from the NRC, they're published on their website, it's just a condensed presentation we have in our bank. We'll provide that.

THE PRESIDENT: Okay. Dr. Demeter?

MEMBER DEMETER: One quick clarification question then and an actual question.

So, my understanding of this REGDOC is that it pertains to Class I facilities who manage Type 1 and Type 2 category materials and it's not beyond that? I just wanted to clarify that up front.

MR. LAMARRE: Greg Lamarre for the record.

So, the scope of it is high-security sites as defined in the Nuclear Security Regs and the list of those facilities was provided on the slide that was presented by staff. That's the extent of the scope of this document, correct.

MEMBER DEMETER: Okay. Thank you. And then the question I have is, Slide 34 of your presentation, International Random Alcohol and Drug Testing Practices by Nuclear Operators, this is probably less than half the

countries that have nuclear operations.

So, did you just choose the ones that were positive that had random and leave out the ones that didn't, or -- it's a fairly select group. So, it didn't include, for example, France which has literally 60 per cent of their energy by nuclear. Other large countries: China, Japan, Russia.

So, anyways, it's a subset. So, I'm just curious how -- it makes me wonder what the other data is.

MR. BOUCHARD: Andre Bouchard for the record.

Indeed, we focused on one thing which was the countries where nuclear power plants are practising random testing and really that's what that data is because, as you were saying, there's an array of measures depending on all kinds of countries of practices and we have data on France that we could provide, if you want to; France, China, as well as Japan, we have all that kind of stuff.

But that slide is only random and as being practices, not necessarily as being required.

MEMBER DEMETER: So, based on that I would assume that countries that are not in this list don't necessarily practise random drug testing as part of their fitness for duty practice?

MR. BOUCHARD: It would be an extrapolation because we didn't verify all countries obviously. We sort of narrowed it down to a brochette of countries that really mattered to the CNSC, some of which are CANDU operators as well because that was one of the focus we wanted to have as part of that benchmarking as well.

THE PRESIDENT: But the answer is not all countries do a random testing, okay. So, let's not dance around that.

And I don't know if any of our experts would have some insight as to, so what's happening in France, for example? France is an interesting -- anybody knows how France manages?

Go ahead.

MS HUNTER: So, France currently does not have random alcohol or drug testing. They do a lot of this -- their fitness for duty assessments through their medical assessments. So, in the event that something -- that there was a suspicion that somebody had a medical issue related to substance dependence, for example, then they would refer the individual in that way, but the fitness for duty assessment would be based on the medical.

THE PRESIDENT: Thank you. Mr. Seeley?

MEMBER SEELEY: Maybe on this theme I think it would be useful to see, you know, the full WANO, nuclear operator, you know, policies on this; so, who's implementing random and drug testing and who's not, because I think it also relates to culture, so you can look at different countries, what they're doing, what their culture is and how they're managing through which is just...

Another point is around human -- the goal is around human performance improvement or maintaining that in the face of societal change, as we see it here with respect to recreational drugs.

And one of the other key I think contributors around human performance is around management of change. And so, I heard the operators talk about, this is going to be one of the most significant policy issues that we've implemented in the decade.

And so then, the other element of this becomes the management of change element and how do you approach this.

And I didn't see any of that in the analysis. So, whether you do it in a phased approach, whether you do it all at once, whether you give the facilities the flexibility around that.

So, I don't know if anyone can comment on

the whole business of management of change, but this certainly affects safety culture and human performance, and so it's an important factor in considering how to implement this -- such a policy.

Any comments from perhaps the operators and/or CNSC?

THE PRESIDENT: I think we may want to hear from staff. They have a lot of experience in actually allowing for the operator to come up with plan of incorporating new requirements and new standards.

Go ahead.

MR. LAMARRE: Greg Lamarre for the record.

I'll make a couple of comments and then pass it to my colleague, Gerry Frappier, to talk a little bit more about implementation.

The question's a very good one. We spoke about implementation in the presentation to say that the expectation would be, if this REGDOC is approved licensees would submit an implementation plan that would look at certain dates to do certain aspects of the plan and the intervention by the licensees is proposing a phased approach. The other -- and I think Mr. Frappier can talk a little bit more about that.

The other point of your question had to do

with change within the organization. I think that's a very key comment and some of what our staff has seen through its research is that the way in which alcohol and drug testing is introduced is critical to its overall success, and that's where you get into elements as to how the employees and the union have been engaged in that, what the communication and consultation has been, how well communicated it has been, how they've been involved and how that type of testing has been phased in.

So, through -- the specialists at the CNSC could probably talk in much greater detail based upon their extensive literature search in terms of where it's gone well and where perhaps it hasn't gone as well, but a lot of it has to do with the extent of managing that change and engaging your employees, so...

And I'll pass the comment on again to Mr. Frappier for specific implementation issues.

MR. FRAPPIER: Thank you, Greg.

Gerry Frappier for the record, I am the Director General of Power Reactor Regulation and responsible for ensuring proper implementation of all REGDOCs and other requirements.

As was mentioned in the presentation, if this REGDOC was approved from a strictly mechanical

perspective if you like, we would include that in our Licence Condition Handbook under what we call the recommendation and guidance section. The recommendation and guidance section is not requirements, but it does indicate our intent to be looking at that in a more substantive way, and so that's the signal to industry, if you like, that they are really going to have to look at how they are going to implement this REGDOC because we are going to be looking to move it into what's called the compliance verification criteria, which at that point makes it a requirement on the licensee.

For something as complicated as this we would be first providing the industry with some time to put together a detailed implementation plan, which is I think maybe what you are referring to as the management of change, and that would typically be measured in sort of several months for them to be able to produce a plan. We have done this with many, many documents and requirements, both technical standards and regulatory documents, so the process, if you like, is well known.

In this particular case it's not just a technical fix that's required. There is a huge dimension of employees and employee representatives and so this is one of the things that will make it more challenging and

potentially the most difficult REGDOC ever implemented as industry referred to. But I think that that speaks more to dates and how much time it might take.

With respect to anything associated with a phased implementation, we have not ruled that out. Again, we would look at industry, who is responsible for managing this change from an impact on safety culture perspective, that they would take a look at how best, from their perspective, to implement this, and if they were suggesting a phased-in approach or something we would certainly consider that.

As that implementation plan becomes better known, we will then look at our own compliance program and see how we intend on providing oversight of these new requirements and put together both inspection plans and other compliance tools that we believe would be appropriate to ensure that the REGDOC is implemented and that we can report back to the Commission about its implementation.

So I do believe this will be difficult, with difficult conversations, but at the same time I think the steps moving forward are known and can certainly be managed.

THE PRESIDENT: So I hear that it was difficult a couple of times, but it's not like you don't

have a template, you have an American program that has been running for many, many years, you have the U.K. and a couple of other countries, and the IAEA and the group of experts that actually pointed the way ahead. So I understand you have to adopt it to a Canadian, if you like, regime, I accept all of this, but I don't want to exaggerate the difficulty here.

And maybe it's a good time to bring in the U.S. NRC. I don't know if some of the -- Mr. Harris, if you are old enough to remember when it was implemented and how it was implemented and how difficult it was to implement it, maybe you can shed some light onto this question.

MR. HARRIS: Yes. This is Paul Harris of the U.S. Nuclear Regulatory Commission.

I wanted to, first of all, thank our counterparts up North for inviting us to help brief the Canadian Nuclear Safety Commission on this very important program that is being implemented. We do believe that a fitness for duty program is a direct contribution to safety and security and I want to extend my personal thanks to André, Linda and Aaron for getting us involved early and often in this process.

Back in 1989 was when the original fitness

for duty rule was published. The industry had a program itself that was being implemented through industry guidance and a number of plants were conducting drug and alcohol testing on a voluntary basis. It was not within the licensing basis for the NRC to have that being accomplished. However, the NRC understood the importance of a fitness for duty program, implemented the rule and similar to I believe what is happening in Canada, there were a lot of issues associated with worker protections, program integrity, program effectiveness and the implementation of lessons learned through operational experience. So we experienced many of the same problems. I think that Canada now has a lot of information to leverage to improve their programs and indeed their program is different than ours in a number of areas and very similar to ours in a number of areas.

We went through a -- not the NRC, but the Federal Drug Testing Program did go through a period of litigation. However, those litigable activities were not that many. In fact, I would characterize it as few considering the implementation of the Federal Drug Testing Program throughout the federal governments, the implementation of the Nuclear Regulatory Fitness for Duty Program and the Department of Transportation's program.

There has been litigation but not so much.

Did that answer your question?

THE PRESIDENT: Yes, thank you. Thank you very much.

And I will pass it on now to Dr. Soliman.

MEMBER SOLIMAN: Thank you very much and good morning to everyone.

Page 41 of the presentation, the last bullet said:

> "Graded approach that allows balancing of human rights and nuclear safety and security"

The issue for me is to find a balance between the safety risk of the station and the rights of the people or the person or the worker as highlighted in the *Canadian Charter of Rights* and the privacy of the person who will be subjected to these tests. I can see that the document -- or the presentation does not address this issue, does not strike a balance between the security and the rights. So I would like to hear from the experts here about how we can balance between security, rights, implementation of this. How long will it take for example to implement the elements of tests for example? What type of test is going to be done? I think the document lacked

lots of information. When I look at it, I need to see more material, more information before I can decide. Thank you.

MR. LAMARRE: Greg Lamarre for the record.

I will make a couple of comments related to that question that you raise around balancing safety/security of our high-security sites and workers' rights and privacy, and then I will pass it on to Lynda and/or Aaron to add some further information.

One of the purposeful pieces of consultation that staff engaged in at the outset was with the Canadian Centre on Human Rights and you mentioned them by name. I think that was a very important piece of consultation and an interaction that staff wanted to engage in, recognizing that this was going to be a different REGDOC and a bit of a challenging REGDOC from that angle.

What we got back from the Canadian Human Rights Commission, in particular related to the implementation of random drug and alcohol testing, is a statement that declared that such testing is permissible for workers in safety-sensitive positions as long as the employer first notifies the worker of the random testing as a condition of employment and that there are also some means of accommodation of the employer in the case of a positive test and specifically in the case of dependency of

the employee. For that reason, the REGDOC was amended to ensure that the duty to accommodate was explicitly listed within the conditions of the REGDOC.

The other point on balancing safety/security with human rights and privacy, as we mentioned in the presentation itself, the scope of the document has been changed, reduced the scope of the most critical safety-sensitive positions that would be subjected to random drug and alcohol testing, still respecting the need to ensure that human performance and fitness for duty is maintained for those types of positions, but also recognizing that when you impose certain new requirements like that it does come at a certain cost. And that was the balance piece that staff was trying to strike.

I think you had some other questions around privacy that I think Lynda or Aaron would be able to answer and they can perhaps add some additional comments to my comments if they deem it appropriate.

MS HUNTER: Thank you, Greg.

I think Greg actually touched on the majority of the issues.

In terms of privacy, of course there is the balancing, as Greg mentioned, between the prescriptiveness of the measures and putting the most

prescriptive or those that impact privacy the most for the smallest worker population and the most safety-sensitive worker population, so those with the most direct and immediate impact on safety.

As well, in order to emphasize this, the REGDOC was actually changed. There is actually a specific note that is listed in section 3.2 that indicates: "In implementing the fitness for duty program licensees are required to consider all relevant privacy-related legislation," which actually was already covered in the preface of the Regulatory Document, which states that nothing in the document allows other legislation to be not addressed, obviously.

As well of course just in terms of the actual types of testing, for cause testing is typically very widely accepted. So when there's reasonable grounds to suspect impairment or post-incident or follow-up when somebody has been identified with a substance dependence, all of those measures typically are acceptable through the jurisprudence and is considered sort of the Canadian accepted model. The pre-placement and random testing then becomes a little more impactful on the privacy issue and that is, hence, the reason why we have limited the population.

THE PRESIDENT: Okay. We also got a letter I saw in the material from the Canadian Human Rights Commission. It was very clear about what you need to do, and rather than hear from staff all the time, why don't you engage some of your experts here to talk, I'm sure they can talk, about some of your experience and add some context based on your experience about some of the difficulties this will present itself to implementation. Who wants to go?

MS HUNTER: Great. So we will send that over to the Canadian Centre on Substance Abuse to elaborate.

--- Pause

MS MEISTER: Good morning. Shawna Meister, Research and Policy Analyst with the Canadian Centre on Substance Use and Addiction.

As part of our report for the CNSC we conducted key informing interviews with organizations that have already gone through this process. A large number of the ones that we interviewed were large organizations with safety-sensitive positions. A number of them indicated that in terms of information that is collected and transmitted on employees who could be identified with a substance use issue, most of them, the third party, whether

it be the substance abuse professional or the business that did the testing, did not transmit highly personal or medical information. In most organizations the key individual who was responsible for being the intermediary between the third parties and the employing organization, the information they typically received would be results of tests, so whether or not somebody passed or failed a test. They would receive -- if the employee was going through a treatment program, they would typically receive whether or not the employee had successfully completed the program. And largely also, if the substance abuse professional had some recommendations, they would receive recommendations on how that employee could return to work. Typically, medical information wasn't transmitted between those organizations.

THE PRESIDENT: Okay, thank you. Go ahead.

MS HUNTER: I could possibly ask Dr. Davidson as well to discuss medical issues related to privacy and how medically-related information is typically dealt with.

DR. DAVIDSON: Yes. Dr. Ron Davidson. I am the Occupational Medicine Consultant, for the record.

Actually, risk management when we are talking from a medical point of view has to consider two

issues. One is the probability or the risk of having an incident and the second being the potential consequences if an incident were to happen. I think everybody can accept that the potential consequences in a safety-sensitive position at a nuclear power plant are quite high, so what we have to do is focus on the other aspects, how do we reduce the risk. From a medical point of view, what we have put together is sort of an understanding of how we are going to assess somebody's health when they first come into employment and again periodically within the employment regime.

Currently, there is a lot of concern, certainly on my part. When I was talking to a number of the interviewees as a part of the study that I did, who were employees, as well as one of the physicians in terms of the standard of the medical assessments that were done, some of them were very good, as you might expect, but other ones unfortunately were basically just check your blood pressure, listen to your heart, listen to your lungs, sign off, yeah, fit to go. Well yeah, he's fit to go to walk on the street, but is he fit to go to work in a safety-sensitive situation? And that's where the disconnect is. The majority of the people that are examining the folks for the first time our family docs and

good clinicians, but they don't know anything about the environment in which the person is working. That was the first disconnect.

So what we had suggested that we do is we put together this -- we call it a medical examination record or report and it has everything on it and it includes -- and so the doctor then just has to fill it out. I don't want his recommendation, we will make that determination. The licensee doc will make that determination. So that information gets put down and that then is given in an envelope to the member himself. The member then delivers it to the medical staff at the licensee. Therefore, there is a chain of command, a chain of control that goes on in terms of his medical information.

When it gets to the medical, occupational medicine person at the licensee, they will look at it and they will determine is this enough information to make a decision. If not, we send it back to the family doc and ask him for more information. If it is, then the decision has to be is he fit without restrictions, is he fit with restrictions or is he unfit, or she, as the case may be.

Once that information then is taken care of, that decision then, the doc at that end will make the

decision whether this person is fit to go. If he is fit with limitations, the limitations are identified. If the guy has a problem with his shoulder and he can't lift anything above the height of his shoulder, then that's a limitation, but we don't say that he has a rotator cuff injury or anything to his left shoulder. You don't tell anybody what it is, you define just strictly the information, what he can do and what he can't do and also hopefully a sort of an expected time of when he will return to full duties.

And then that obviously goes to the licensee's management folks. They will then, if necessary, enact sort of the accommodation issues that must go on at that point. If they are coming -- so there is a tight, in terms of the privacy issues that we were talking about, medical confidentiality, there is control on that because the only people that will actually see the member's documents and all this information that we are looking at will be the initial physician, which we were calling the examining physician, who is the family doctor. He will keep his copy, the original -- he will keep the original. The copy then will come to the reviewing physician, which belongs to the licensee, and he will then go ahead and make some decisions based on that. They will keep that copy

then.

So that chain of command is very clear, it's very clear within the medical net, as our good doctor will understand. Within the College of Physicians and Surgeons, all of them, there are very strong penalties for people who disregard privacy issues, and so apart from the privacy acts that we have, we also have the colleges that look after that.

THE PRESIDENT: Thank you. You are going into now the program design, which we will get into once the industry proposes a design in which we will be able to determine whether all the safeguards are put in place.

I'm back to Dr. McEwan. Okay.

MEMBER SOLIMAN: I have a supplementary on that. It is very clear now that this REG document needs lots of backup of experts' opinion in different areas, legal, medical, whatever. I don't see that. So is it going to be that way?

--- Pause

MR. BOUCHARD: André Bouchard for the record.

We have been working at it for the past eight years. We have reports that we can definitely provide. They are part of our research reports as well.

We commanded all kinds of reports with regards to legal case law as well as interpretation. These experts here have provided us with all recommendations in forms of reports. All of these are available on the CNSC's website as part of our available research reports as well, so we could provide all of that information to the Commission Members if necessary, if this is what you are seeking.

MEMBER SOLIMAN: So you are going to -- what, a list of references and cases and support material on that REG document or how are you going to do that? Just scattered information or gathered information where you can really identify issues and a resolution for that?

MR. JAMMAL: It's Ramzi Jammal for the record.

The question with respect to the information -- and I'm not here to say what information is required, I would like to highlight one issue. There is a CMD, which is a Commission Member Document, and a regulatory document. I am not against the request for information, but we have to put the information in the proper document.

So with respect to the CMD itself, my colleagues will determine the request from the Commission and I will update the CMD accordingly. A regulatory

document is to complement regulation. So, the evidence associated with requirements, implementation will be in a REGDOC, but the CMD itself is the substance by which the Commission will deliberate to render its decision.

I want to clarify the process from that perspective because your question with respect to the human rights, I would refer you to the consolidation of the input from, in specific, the Canadian Human Rights. For example, items 10 all the way to -- actually, I'm going to go by memory here. Our staff took the input from the Canadian Human Rights Commission and they have amended the REGDOC in order to suit the recommendation coming from the Canadian Human Rights Commission.

So my point here is; there is a CMD and the information we provide in this CMD, then with the integrity of the regulatory document will be maintained from that perspective. So any information you will request, I commit that staff will be more than happy in order to amend the CMD to provide the information requested, because we have the regulatory document which complements regulation, that really has to be clear with respect to what is required or we will be more than happy to provide clarity with respect to your decision or you have enough information to render a decision.

THE PRESIDENT: I actually don't believe we need a mountain of paper here. This is a policy discussion about whether we are going to implement this regulatory framework and how it's going to be implemented. It's going to take years, as we heard. So we don't need all the kind of background. I think we have enough benchmarks, we have enough experts, we have the American, et cetera. So I for one don't need it. Mind you, I am a bit privileged, I have seen the mountain of paper that exists on this documentation. I don't think it will be useful and give us more information to make a decision about whether we want to proceed. If we decide we want to proceed and if we want further information on a particular aspect, that's fair ball and I think that is what will happen, but I guess to get back to basics, whether we should have this kind of a framework, I'm not sure that this is what we want to do. Again, I leave it up to my colleagues here to explore further. I don't know whether we want to...

I would like to continue with the question session and I am back to Dr. McEwan.

MEMBER McEWAN: Thank you, Mr. President.

So perhaps this is a question -- actually it's probably a question for our expert staff and for

industry.

In the current environment -- it's a two-part question. In the current environment, how frequent is it that a medical condition, whether it is a physical medical condition, a mental medical condition or something related to drug or alcohol use, how frequent is it that you see risk in your organizations and how frequently do we see risk in the workplace? And secondly, what is the administrative and financial burden on industry of putting this in place?

MR. SAUNDERS: We will start with industry if you like. Frank Saunders. I think a couple of points to make.

I mean, first off, we tend to focus a lot on drug and alcohol testing. If you set aside the legal challenges with drug and alcohol testing, the actual implementation and administration of that program is relatively straightforward. People have done it before, we know how to do it. So assuming that the legalities hold up, we don't see that as a major obstacle to implementation. That can be done.

The issues around psychological testing and physical testing are much more complex. Now, we have done this before. We did it -- for security we do both and

for fire we do physical. And the logic was pretty straightforward.

On security, it was a new workgroup that we -- you know, in 2001 when we started doing this we had never had this workgroup before. They carry deadly force and, more importantly, a single individual can and probably might need to make that decision to use deadly force. There is nobody else in our organization where one individual makes that kind of extreme decision on his own, with nobody else -- his or her own, with nobody else involved. And the nature of the job was very different than the jobs that most people do, so we felt -- and the effort to do the psychological and physical testing there was an industry-led effort in that case. You know, we did that.

It took us about four years to get to a point where the psychological testing was considered by the experts doing it sufficient to really test for that job. And there was a lot of union involvement and others of course, because the suspicion people have is that you are trying to screen out people you don't want in the job, that, you know... So what you have to convince people of is that the test is legit, that it's not there for any other reason.

The physical testing was a slightly different case. Both fire and security, their normal day-to-day job is certainly not sedentary, but it's not aggressively physical, right? You are walking around, you are cleaning things, you are fixing things, so it's kind of normal. But when they are called upon in an emergency, very suddenly they are into high stress, high-energy jobs and there is all kinds of medical evidence that says that's when you have a heart attack or that's when you fall down.

And so those physical testings and the requirement to stay physically fit were seen as two things: one, to make sure they were capable of doing the job, but (b) also to protect the individual so that they don't do themselves harm in an emergency, that they remain physically fit. So most of those testings are ongoing. They continue to occur so that people stay fit and of course we provide people with facilities and time to actually stay fit and a regime that they need to go through.

So those tests were made for good reasons. And we know -- and again, the physical testing side again took about three years. We hired experts. We had lots of participants involved about what the actual physical requirements were, how you test for it, how you do the

medical, again, with the same notion not to be over the top but to be sufficient, and lots of stakeholders should be involved. So that part of the implementation will be significantly longer than drug and alcohol, in our view, like, say, assuming that legal challenges don't delay the other.

The issue we have when we start talking about the physical testing in particular for other jobs like control room operators and operators in the plant, they don't have this kind of physical demand even in emergencies. They don't change dramatically what they do from day-to-day and so I suspect we will get challenged to say why are you doing that, you see us every day. We already require people to report to us if they have physical problems which will affect their ability to do their job. So we do look for that, right. So that will be the challenge in implementing the physical testing.

Psychological testing, I think you can make a good argument on the shift crews, it's a different -- you know, and they can be subject to significant stress. So I think there is some reason why you would say a certified control room operator maybe should have some kind of testing. Obviously, lots of concern of people about those already in the job and how

that works and all that. So from our point of view, that part is more complicated than the drug and alcohol testing, quite frankly, and that's why we suggest keep the audience narrow to where it's clearly required and not many people are going to argue with you and do the implementation that way and it will make for a smoother transition.

THE PRESIDENT: So I just want to have a very specific understanding of what you are saying. So if I understand, you are okay with the document as is as long as the staff are flexible on the implementation? Or am I missing something? What is it specifically you don't like about this document?

MR. MANLEY: President Binder, Robin Manley for the record. And again, I invite the rest of them to comment on this, but I will give you a couple of specific examples.

So when we come to the pre-placement and periodic medical tests, as I understand the REGDOC right now, it would cover a wide range of population. So it would cover the certified control room staff that we are talking about and, as Mr. Saunders just said, we are okay with that. But once you talk to this wider range of the safety-sensitive in a broader population sense -- and the CNSC staff with its three sort of bubble diagram explained

how that's a numerous population, 4,500 or whatever it is -- that would hypothetically be anybody on minimum shift complement.

THE PRESIDENT: But that's as you define. No, I really want to understand this because my understanding of what they're saying is you define this 4,500, so if you decide it doesn't apply there, it's not sensitive, then it's your decision. Am I understanding correctly? Can somebody please help me? You define what a sensitive job is and if you define it to be sensitive, then this thing kicks in. Did I get it right?

MR. BOUCHARD: André Bouchard for the record. Yes, you did get it right.

We could get Dr. Davidson also to talk --

THE PRESIDENT: No, no, wait a second. I just want to understand what they --

MR. MANLEY: That is right.

THE PRESIDENT: I don't want to get into the technicalities. I just want to understand. On the policy side, are you comfortable if you decide what is sensitive, then the package kicks in?

MR. MANLEY: President Binder, Robin Manley for the record.

I will try by reference to the actual

REGDOC to show you precisely what I mean. So if we refer to a table at the back of the REGDOC -- and I'm just trying to find the exact table. It's page 22 of the CMD, Appendix A, Table 1, type of assessment by work group and circumstance.

So if you see on the left-hand side there's the workgroups listed: certified workers, onsite nuclear response force, okay. Those are the folks that we believe that this REGDOC should be concentrated on.

If you keep on going down you see this applicable minimum shift complement. Now, unless I completely misunderstand how the CNSC staff have defined that, and I don't think I do because I know what my minimum shift complement is, they are saying that we would have to do pre-placement medical testing and periodic frequency to be determined by the licensee medical testing for those kinds of personnel.

Now, I heard the discussion earlier from this expert -- I'm sorry, I have forgotten your name -- who spoke to, you know, the controls and the mechanisms and why it would be done and such and so. What we don't observe is an actual safety problem. We don't observe our maintainers, our Chem Techs on minimum shift complement, your regular operator, we do not observe them having

medical issues that are untoward that are affecting nuclear safety of the plant. So we are asking why we would implement this extra requirement where we do not perceive that there is actually a safety benefit from doing so.

THE PRESIDENT: But again, I'm reading medical, they require medical and the extent of medical can be very, very simple here. Are you saying you don't need it even for ERT, fire brigade, you don't need medical at all?

MR. MANLEY: We do not disagree with the requirements for ERT and fire brigade. We already have those in place.

THE PRESIDENT: So minimum staff you don't agree? So is that the essence of your disagreement at this table? I mean because my understanding was that staff was -- aside from the supersensitive position, staff is very flexible about you designing a program that fits these particular positions. So what am I not understanding?

MR. SAUNDERS: Yes. So Frank Saunders for the record.

I mean we have seen this before in REGDOCs where the wording is a bit vague and then the translation changes, right, and suddenly we are doing a lot more than we thought we would do. Truthfully, as far as medical

testing goes, we are already doing the populations we think are at risk. You guys didn't have to tell us to do that. You picked up on it eventually and put it in the REGDOC, but in reality we were doing it already because we recognized the issue.

When it comes to operators doing their rounds or others, there really is nothing unusual about these jobs that would suggest we should be doing ongoing medicals or whatever. We don't have a problem, we certainly don't have people -- and they do tell us. We have good records of people who come to us and say, I have a medical problem, I need to be reassigned for a while or something because I can't do this or that.

So the issue really is this, is really how broad this is in the table. If there was a statement in the table that you must do this group, everything -- you know, if you said really clearly, the rest is all up to you, we wouldn't have a problem with it. When it's kind of wishy-washy, we know down the road that this will come back, right?

THE PRESIDENT: As you know, we are in for clarity, so clarity has to be there absolutely. And I also understand that -- a couple of places I read that they are trying to document the codes you are already implementing,

so they are just documenting some of these things. Staff, do you want to reply to that?

MR. LAMARRE: Greg Lamarre for the record. I will make a couple of comments and I will pass it back to Lynda Hunter.

So the crux of the issue is over the definition of the minimum shift complement. That requirement has been in place for quite some time for the licensees using G-323 to determine their minimum shift complement. So it is determined by the licensees and it is embedded within the LCH based upon the licensee's analysis.

The other thing that I would like to mention is that there is latitude for the licensees to remove someone from the minimum shift complement testing regime that is being proposed here, based upon the fact that they are not in a safety-sensitive position as well. So there is latitude there as well.

And just to bring you back to the fact, the reason that we have minimum shift complement is this is the minimum number of critical staff that have safety-sensitive roles in the case of a design basis type of accident. So the reason that they have been determined to be part of the minimum shift complement is that they do have an important role to play should things go awry with

it at the nuclear plant and a lot of that has to do with them being able to perform task A, B and C, and the medical examinations here that we are talking about are job- and task-specific.

And Dr. Davidson can talk about how that --

THE PRESIDENT: No, but wait a second. It's not about the expert here. It is about their interpretation of what the document says and I think that's where -- I just want to make sure it's not the misinterpretation of words that's causing this disagreement.

MR. SAUNDERS: It's Frank Saunders for the record.

The issue is -- I mean the statement sounds like we choose exactly what the minimum complement is. It is not solely up to us, right? If it was, it would be different than it is today. So this is not a sort of cut-and-dry kind of thing. We have to demonstrate certain capabilities here.

The issue on the physical testing though is really kind of separate from that. The question is: Is what they would do in an emergency different from what they do day-to-day? So therefore, they might be suddenly called

upon to do some task which might exceed their normal physical capability. And for many people, most everybody, the answer is no, right? Certified staff is a little bit questionable because generally they are still doing the same stuff but, you know, there certainly is an increase in pressure in that if you are in that kind of situation. So we see the connection.

So, you know, from our point of view, if we thought that operating staff, maintenance and Chem Techs would suddenly change the physical exertion that they required to do their job, then we would agree. We just don't see that because the duties they have in an emergency are basically the same duties they have on day-to- day routines. We just need to make sure they are there to do that, that's all.

THE PRESIDENT: Staff?

MS HUNTER: Hello. If I could just -- Lynda Hunter for the record. If I could just add to that.

In terms of the actual requirements for the regulatory document, in section 4.1, which covers the identification of safety-sensitive positions, staff has clearly indicated that certified workers and nuclear security officers and nuclear response force members, those security folks are included.

With respect to minimum staff complement, it clearly states that minimum staff complement typically would be included as a safety-sensitive position unless licensees through their risk analysis have determined that those workers are not safety-sensitive. So in other words, there is an out for them. So for example, the example came up a stockkeeper is part of minimum staff complement because they have to be there around the clock in the event that that equipment is needed and sometimes that equipment could be needed in short order, so sort of time-sensitive. So they are required around the clock. Could they cause a significant incident? That would be actually up to licensees to determine. If they couldn't, then they could be excluded. So really, we are talking about those workers whose impaired performance could cause a significant incident.

THE PRESIDENT: I think --

MR. SAUNDERS: Fundamentally, I just need to make the point because everyone keeps saying this is going to be up to us. It is not. You have to concur with our analysis, right? So in the end of the day this is not a licensee decision as it's written in the REGDOC. We can argue to take people off, we will not necessarily get agreement to take people off, and so our point is simply

that if it's clear that it's our call and that we only have to have analysis present, no problem. If it's not clear, then this will change and will grow with time, and that has been demonstrated over many years and many different documents and many different regulations. So, you know, that's not an unreasonable statement.

So, you know, our point of view is this will work easier if you stay with a very small group and we will be more likely to be successful. So that's our input into that process.

MEMBER McEWAN: Can I just ask, what is the increase in numbers from certified workers to including all minimum shift complement workers?

MR. SAUNDERS: Well, certified workers at the Bruce site, the minimum complement would be 30 for each station, so 60. However, the group is actually about twice that size, a little bigger, so in the sort of 200 people range. If you could do all minimum complements, you are about 1,500, 1,200 to 1500. And it depends on how you define it, is it people currently on minimum complement, is it people who might come onto minimum complement? So by the time you do all that, if you include everybody that has the calls to do that work and might be assigned it, you are into the couple of thousand. So it all depends on how

you -- it's easy to say minimum complement as who is there today, but I might call Joey in tomorrow because I have some kind of an issue and now he's on minimum complement and he wasn't yesterday. So the group actually gets quite big when you start putting all that administrative stuff around it.

MEMBER McEWAN: So it's an order of magnitude?

MR. SAUNDERS: Yes, for sure.

THE PRESIDENT: Look, we are going to take a break, a biological break here for 15 minutes. But before we leave, just so I understand where we are leaving it, and I don't want to put words in your mouth, but if I understood, on the drug and alcohol regulatory scheme here, on the most sensitive position you think it's okay? On the rest of the population, if I read you correctly, you would like to see some different text about the approval process in there? And, you know, by the way, as an aside, you can always -- if you don't like what staff is saying, come back to the Commission because we are so much more reasonable, right?

--- Laughter / Rires

THE PRESIDENT: The point here is there is always going to be this requirement to get agreement, but

if you can come up with some text that you will be happy with, I just wonder, and we will get back to it after the pause, what if there are other issues in this document of concern?

So we will break now for 15 minutes, getting back at 25 past 11:00. Thank you for your patience.

--- Upon recessing at 11:10 a.m. /
Suspension à 11 h 10
--- Upon resuming at 11:27 a.m. /
Reprise à 11 h 27

THE PRESIDENT: Okay. We're back.

Mr. Lammare, you want to say something, add something?

MR. LAMARRE: Thank you very much, Mr. President.

Just the conversation that was going on before the break, I thought we'd just add a little more point to it. I was reminded of the fact that a lot of this was around the licensee's determination of the SSP population. And this is similar and consistent with what was presented in RegDoc 2.2.4, Fatigue Management.

So the licensees have a requirement on them right now for those high security sites to go back and do an analysis of what their SSP constitutes, and that is in line with the approach that's being requested in this RegDoc as well, so there's consistency there.

The other thing that I also wanted to mention is that -- perhaps a comment on the minimum shift complement and the role of minimum shift complement in the case of design basis accidents.

Perhaps I'll ask Mr. Bouchard just to give an example as to why some of the medical pre-placement and periodic testing is deemed a requirement within the RegDoc and perhaps provide some example to illustrate that.

MR. BOUCHARD: André Bouchard, for the record.

In our work to validate and verify minimum shift complement, we do review the important analysis done by the licensee. One of those key ingredient to that analysis is their emergency procedures within the design basis.

So within that, we observe, actually, physical -- physically people deployed and doing what is expected out of them during an emergency or an event response with regards to the procedures, which means

suiting up in plastic sometimes, wearing protective gear and having given determined time to actually get to a station, perform an action and do that within the confines of the time allocated and the physical, sometimes, limitations with regards to either location, smoke or even absence of light.

This is the basis on which we -- really, our point is, minimum shift complement is safety sensitive position, but the licensee, obviously, as we said, like the stock keeper, might be exempted because a stock keeper is a defined environment where he's not asked to physically perform actions necessarily in a given period of time.

This is why the RegDoc in the table means and states that it's MSC as necessary or as determined by the licensee.

It's important that the licensee does this safety sensitive position analysis because they are the one that have the procedures for emergency and can assess who needs to perform such critical actions at what time so that we could get the assurance that they can do that, the person can do that within the prescribed time.

THE PRESIDENT: I think what we heard is that they're not -- that it's so generic that it can capture more than they would like or agree with and the

approval process, who's in, who's out, is a bit vague and they don't like the fact that you have the last word here, I think. That's what I heard.

So you may want to build in a little bit more mechanism that you can escalate -- I always say escalate to the Commission, and maybe an agreement before you do that because I know how much you love to come in front of us also, so there's incentive to get agreement before coming to us.

I think there was a comment.

MR. COTNAM: Good morning. It's Shaun Cotnam, Chief Regulatory Office from Canadian Nuclear Labs, or CNL. So it is still morning.

We as industry did caucus during the break and have a few things that we'd like to say, starting with the fact that there are four high security licensees. You can see us all here.

In a moment, I will turn it over to New Brunswick Power, Jason Nouwens, to also talk.

I would like to start with what we agree on. We're all here trying to make things safer, and I don't want that lost and I don't want us as industry to come across as not seeing that. That's simply not true.

In fact, we believe we had a long history

of managing fitness for duty well. We do it well now, we believe, and testing is just one more element.

So let's start with where we agree because we're all trying to make continuous improvements.

Beyond that, though, I think there are probably three important points.

First, I feel duty bound to put it on the record that, just like was said by my industry colleagues, this is going to be a difficult implementation when we get to this RegDoc.

And Dr. Binder, you know very well, even better than me, that Staff have a good experience working with industry implementing RegDocs. WE do this a number of times successfully. But I would point out that this particular RegDoc has two things very different than what we have seen in the past, one being such a direct connection to our employees and, more specifically, the collective agreements. And secondly, the other connection I would point out is to the potential legal ramifications which have been alluded to a couple of times.

So I think that's an important point why we say this is a potentially very difficult implementation period.

And you've heard examples of four year for

psychological testing it took us just to do the required area which we agree with, which is the NRF. So I think that's an important point.

I would also like to say that, as an industry, we have recognized that CNSC Staff have consulted well with us. They have made a number of adjustments on the way. Maybe that did not come across clearly at the beginning, but we do want to acknowledge that.

And I think maybe it's just worthwhile saying that we really do believe that an early victory here, if we just start with that very small population we talked about could pave the way for success, having a good early learning curve. It could always be modified later.

With that, at your pleasure, I'd like to introduce Jason Nouwens from New Brunswick Power.

MR. NOUWENS: Thank you, Shaun.

For the record, my name is Jason Nouwens. I'm Director of Regulatory Affairs and Performance Improvement and, like Shaun and my other colleagues said, that we are all committed --

THE PRESIDENT: I can't hear you. Is the mic on?

MR. NOUWENS: Sorry. I'll move closer.

We are all committed to safety and we

agree in principle with this RegDoc and where we want to go with it.

I just want to highlight a few points that I think we heard this morning. One is what Robin said at the early, that -- in his opening comments, that industry recognizes and supports the importance of staff being fit for duty. That's important to all of us, particularly certified control room and armed nuclear response force staff.

You know, as was mentioned by one of the Commissioners, from a change management point of view this will have a significant impact to the station and the workers. It's particularly sensitive to New Brunswick, as I'm sure you're aware of the Irving refinery case for a similar drug and alcohol policy that was taken to the Supreme Court of Canada and it resulted in a decision.

So you know, in particular in New Brunswick, it would be sensitive to the workers who were friends and neighbours of the people that were in the union at the Irving refinery, so from a change management point of view, this will be significant. It will be very sensitive. It will affect workers' lives and their personal lives.

And really, what we're recommending here

is, from a success point of view, a small scope that's clearly defined will only help our implementation.

So I want to bring your attention to one particular part of the draft Regulatory Document, Section 4.1, and I'll just -- I'll read it very quickly. It says:

> "Safety-sensitive positions shall include:
>
> 1. certified workers
>
> 2. the following security personnel: Nuclear Security Officers (NSOs), onsite nuclear response force (NRF) members, and designated non-NRF personnel."

An example, I guess, of the tangible suggestion that we would like to make, if that section stopped there, that would define scope to something that we can all clearly understand and that the workers at the station would clearly understand the safety and significance.

I'll just read on the next three sentences in that section:

> "In addition, licensees shall perform a risk-informed analysis to identify any other safety-sensitive

positions."

So that would require going through thousands of positions documenting the physical, medical, psychological requirements that would need to be in place for the performance of those duties.

What we're recommending here is we could remove that sentence and the next two, which I'll read very quickly:

> "Positions that are part of the minimum staff complement at high-power reactor facilities shall be considered as safety-sensitive unless documented as not safety-sensitive through the analysis."

So again, another analysis.

And the last one:

> "Licensees shall list all safety-sensitive positions in their governing documents."

Again, we have no problem with that statement, but as a tangible suggestion, if we remove those two requirements to go through the position-by-position analysis, it would provide a clearer scope and one that all

of us could easily identify with the significant safety requirements and provide a smaller scope and we think would facilitate a quicker and a more quality implementation of this RegDoc.

MR. MANLEY: Jason, if I could just add one additional clarification to that.

And as -- very consistent with that, but as part of what I'd been saying earlier around the minimum shift complement, we would recommend that in concert with Jason's recommendation that the table also be adjusted to be consistent with that.

Thank you.

THE PRESIDENT: Staff, you want to react to this?

MR. LAMARRE: Greg Lamarre, for the record.

So we've heard the comment. A couple of points that I'll reiterate again is that the definition of SSP is already defined.

It's defined within the 2.2.4 Fatigue Management RegDoc as including certified workers 1 and 2 as well as the minimum shift complement pending the analysis that's to be done by the licensee as per their implementation plan that's due to CNSC by end September.

The other group that's not included within that list that staff feels needs to clearly be identified is the ERT as well.

So I'm just pointing to the licensee's intervention right now, but perhaps I can turn it over to Lynda Hunter and she can provide a little bit more in terms of what those clauses were meant to provide to both the licensees and staff.

MS HUNTER: So just revisiting Section 4.1 after number 1 and 2, the licensee person from NB Power indicated that there's two analysis there -- analyses. There's actually only one analysis. That's to identify the positions that are safety sensitive. And that includes re-examining some of the minimum staff complement personnel that they feel may not be safety sensitive.

So there is actually only one analysis.

And as Greg alluded to, that's already a requirement currently through RegDoc 2.2.4 Fatigue Management. So that activity should already be under way.

And that same analysis up to licensees to determine if there's any other safety-sensitive positions that they feel are important to safety, those individuals whose impaired performance could impact nuclear safety and actually cause a significant incident.

So there may be a few others, for example -- I'm just throwing out an example like fuel handlers that aren't included in minimum staff complement that they may want to assess, and that is just one analysis.

THE PRESIDENT: Dr. McEwan.

MEMBER McEWAN: So I'm interested that you went back to the other fitness for duty document which again, if you remember, we had significant conversations about and there was some angst about that document as well.

It seems to me that the difference between the fitness for duty related to the rest, if I can use that as a generic term, and this one is actually the human rights implication of this one as opposed to that one. And I remain unconvinced by your argument that the two populations are entirely comparable because of that reason.

--- Pause

MR. MANLEY: Okay. As CNSC Staff are consulting, maybe I'll just comment briefly on the RegDoc on fatigue management.

As CNSC Staff are aware, we are in the process of finalizing our implementation plans for that RegDoc. And that does include analysis of positions to which fatigue could be a factor.

And I guess I would say in a general and non-technical sense it's not necessarily obvious to us that, upon doing analysis of a particular position, that you necessarily end up with the same requirements that would then occur.

So for example, if I then take a mechanical maintainer, it's possible that you conclude yes, they have a role in minimum shift complement and that there is a potential for an error on their part to have an impact on the plant and, therefore, you need certain kind of requirements in place. They all need training. They all need to be qualified. They all need to be supervised.

Does that necessarily mean that if they need limits on hours of work that they necessarily need pre-placement medical testing or psychological testing or something of that nature? It's not obviously true that generic requirements would arise, and so, you know, we're doing the analysis for fatigue management and we've made a proposal with respect to this RegDoc.

MEMBER McEWAN: So does Dr. Davidson have any sort of thoughts or comments around the differences in the fatigue element and the medical, psychological, substance abuse population?

Are they actually different?

DR. DAVIDSON: Ron Davidson, for the record.

I can't really speak on that, to be honest with you, but perhaps my colleagues here have something to add.

THE PRESIDENT: Anybody want to venture into this? No?

So let me ask you something very practical. In your statement, still on 4.1, okay, just so I understand, if the "shall" should have been "should", would you be happy?

See, I guess if you take out the most sensitive position, which we all agree, if you like, that will come under this new Reg, and then the onus is on you to identify whether you like it or not as a "should", is everybody -- I know Staff may not like it. It does not force you. But it's kind of a sharing in the responsibility between our oversight responsibility and your safety responsibility.

What will that do? I'm just trying to understand the parameters, how close we are to an agreement here.

MR. SAUNDERS: Frank Saunders, for the record.

I think -- I mean, from experience point of view, I don't find there's much difference between "shall" and "should" in terms of the way staff interpret the documents --

THE PRESIDENT: Oh, my God.

MR. SAUNDERS: -- quite frankly.

THE PRESIDENT: You just said something that will take us years to get over.

--- Laughter / Rires

MR. SAUNDERS: I could show you a lot of -- a lot of assessments where those definitions are not seen as very distinct, right.

So I really think -- I mean, in the fatigue as well, we didn't entirely agree with the breadth of the population, but fatigue assessments are relatively easy to do. Once you've defined your population, they're not a big challenge, right.

So yeah, we maybe accepted a little more than we would have liked, but we felt we could -- we could deal with it.

That isn’t the case here. This is more challenging, and the clearer we are about it, the more -- and not just to us. The clearer we are for the individuals who work for us about who's in and who's out and how that

will change, the easier this will be to get done.

We perceive more challenge on an individual and union level actually here than we do anywhere else because, you know, I know no one would think it's this way, but sometimes individuals think we're just trying to achieve our own ends and use these things as a methodology to get there.

It's not actually true. We're not interested in doing that, but we need to be able to show people the logic about why it is, why we've chosen this position and not that position, and why that matters.

It just so happens that these are some of the higher-paying jobs as well, of course, which complicates the issue.

So I don't find "shall" and "should" gives you much of a distinction. My preference would be make it nice and clear, you know --

THE PRESIDENT: But there is -- but there is a community that's missing. I mean, that's emergency, the fire, that you may indeed want to do this.

So I -- so I'm looking for formulation that would allow you to add to the 1 and 2 clause as you see fit without a mandatory, you know, review and submit to -- you know, if somebody said you want to go with

some -- a graded approach, that would be very graded approach, see how it works out.

MR. SAUNDERS: I mean, fire's already -- we're already doing this for fire, so to be honest with you, I don’t have any argument with fire, either.

So -- but fire, a little less so on the drug and alcohol testing 'cause they're not sort of hands on on the day-to-day basis. They're really only there when an emergency actually occurs.

But in terms of physical testing and that, fire is already -- already doing that for -- for health and safety.

THE PRESIDENT: No, the "should" will -- on the fire, it's going to be -- only drug and alcohol going to be for cause, if I understand correctly, so I think I'm almost talking myself into liking this regime better.

MR. NOUWENS: Jason Nouwens, for the record.

If I could add for a minute.

You know, I like your idea of changing the "shall" to "should". Perhaps we could also move it under the Guidance section, which would be just a few lines down. But if the Commission and staff would be open to it, we

could, as an industry, collaborate and propose wording for this particular section.

THE PRESIDENT: Staff?

MR. BOUCHARD: André Bouchard, for the record.

I'll come back to the beginning of that discussion with regards to SSPs and what is it that staff is trying to do with both RegDoc.

If we take it all the way back to the origin of this, our purpose and intent is to support workers in their performance and the capacity to do what they're expected to do at the time they need to be able to do it with regards to safety and security. This is the anchor from which we work.

A second layer is what risks are we trying to capture here, which is the risks of impairment under all of its form, so impairment caused by either fatigue or impairment caused by physical, medical limitation just like colour-blindness could be an impairment for a nuclear operator if the signage and the warning signs are used in red of green. Colour-blindness would cause an impairment for that worker to actually be able to do what he's expected to do, and that's an example. And we talked about fire prevention.

So this -- from that, then, we came up with the safety-sensitive position.

This is a concept that is available and out there and legally discussed with regards to identifying positions that are key to safety and may have an impact on that.

We do recognize the licensee are the ultimate safety -- responsible for the safety of the plant, and this is why, basically, they are able to identify who has a job requirement that impose on them the requirement to be either physically, physiologically, mentally or any other kinds of fitness. And this is where they have it.

The difference that the CNSC did was prescribe very specific role because we certify these people, as an example. And we've been certifying them since the seventies.

Nuclear operators, they're key, they're important, and we said there in the basket they must have, and RT as well.

And min comp, the reason for that is obviously we discussed that. It's been proven and they're part of the defence in depth system.

Yesterday we were discussing about severe accident management as an example of a fifth layer of

parameters. Minimum shift complement comes before that because it's actually design basis. These people, again we have seen through the validations, that some of them have very strong physical requirements. We and the licensee have expectations that they perform given actions in a given prescribed time in a given fashion. Again, it's up to the licensee to determine who are these people? What are their roles?

Ultimately, what the CNSC wants, what the public wants, these actions be done by capable people in a time prescribed so that the safety barriers would be sustained. This is why the two REGDOCs exist now when we are using a concept of safety-sensitive positions.

THE PRESIDENT: I think we left it with Dr. Demeter.

MEMBER DEMETER: Thank you. If this has a large technical document behind the answer to the question, then I will just receive that later as the answer.

So yesterday we talked a lot about deterministic and probabilistic risk assessment. This is a mitigation effect so we've looked at random alcohol and drug testing as a surrogate for potential risk of someone potentially being impaired, not necessarily a direct correlation. And you have chosen a cut-off of 25 percent

of the population over a year. What informed that threshold? What risk or safety balance?

And if that has a -- if you've got a large document that sort of says here is the analysis and here is the spectrum and here is why we chose that sweet spot, just provide that. That would be fine. But was it informed by that kind of analysis or how did you get there?

MR. LAMARRE: Greg Lamarre for the record.

I'll ask Aaron Derouin to start and then he is going to flip it over to one of our consultants for a little bit more specifics on the sampling rate.

MR. DEROUIN: Hi, Aaron Derouin for the record.

As I mentioned in my earlier statements, the U.S. Department of Transportation establishes a 50 percent sampling rate for alcohol and drug testing. On the basis that there is less than 1 percent, positive percent rate, they can adjust this rate accordingly.

In speaking with U.S. NRC, they had an initial 100 percent random testing rate which is adjusted to 50 percent based on some statistics. They can speak further to that.

When you look at some of the risk profiles of our licensees and some of the benchmarking that we look

at in TTC, or Toronto Transit Commission, have started testing at around 20 percent. So we thought that 25 percent was a threshold that we could test that that wouldn't be too burdensome on the licensees but may also provide some level of deterrence, if I can say that.

Sorry, I will ask Dr. Fraser to elaborate on any experience that he might have with some of the drug testing programs in Canada such as the DND and Corrections Services Canada in terms of percent of random test rates.

DR. FRASER: Hi, Dr. Albert Fraser, toxicologist, for the record.

I think in this context it's important to remember that you start some place and you can fine-tune it with time. You know, the whole issue of drugs in the workplace has been around in North America and in Canada for two to three decades. So you have to start at one point. You pick out a figure. There is no absolute correct figure but, based on your findings, if you continued on for five years you may say we either have got to increase it; we've got to decrease it. You want a fluid document that can be fine-tuned over time.

And the percentage issue does vary with organizations and with individual corporations, right, and a lot of that is not published because certainly General

Motors doesn't want to tell you about their workers or their percent positive rates, where you tend to find that from the military or from governmental agencies, if you like, what you find. But I think it's not the absolute number that you're looking at, which is the ability over time to perhaps modify that.

That would be my comment. Thank you.

THE PRESIDENT: Mr. Seeley...?

MEMBER SEELEY: Yeah, I just wanted to come back to the implementation, but we do note that the REGDOC is quite broad in that the Fitness for Duty includes medical testing, physical testing; psychological testing, D&A testing, so very broad in its scope.

I wanted to maybe just ask the NRC before we lose them here at lunch about their experience in implementing -- I think they were referring mostly to drug and alcohol testing was what we had some reference to earlier and they were providing some insight. So it was really around when they were moving on fitness for duty did it include all these other elements or did they take simply the drug and alcohol testing component on its own and then implement?

And I would like to hear you know what kind of lessons learned there were in their program, how

they might recommend to do it better from their lessons learned; if they have anything they can add there and around the scope of it, when it was implemented.

MR. HARRIS: Yeah. Hi. This is Paul Harris at the Nuclear Regulatory Commission.

Let's see, that was quite a lengthy question. Can you ask that question one more time, please?

MEMBER SEELEY: Sure. We'll take it in layers.

So the first layer was really around the scope of the Fitness for Duty REGDOC that's been proposed here. It's more than drug and alcohol testing. It goes to medical, physical; psychological, et cetera. So I was curious. When the NRC approached this did -- was that all included in that package or were they really very focused on the drug and alcohol testing when they began their fitness for duty work some years ago?

MR. HARRIS: When the provisions were first proposed by the staff to the NRC Commission there were a number of separate programs dealing with the fitness of individuals at nuclear power plants. So originally and to this day, licensed operator medical conditions are regulated by different provisions within the commission's regulations and that's called 10 CFR, Part 55, and the

licensed operators undergo their medical conditions there.

However, licensed operators are also subject to 10 CFR, Part 26 which are the fitness for duty provisions. The Canadian proposal combines licensed operators medical determinations into their program whereas Part 26 does not do that because we utilize a different requirement.

The same thing goes with security officers. The NRC security provisions are separate and distinct from Part 26. However, there is an integration of requirements; namely, security officers do have to be fit for duty under Part 26 fitness for duty programs. In addition, similar to the Canadian proposal, security officers have to pass certain physical, mental and psychological testing to be a security officer at an NRC-licensed facility; on the Canadian proposal, combined that medical, psychological assessment of security officers into their proposal; whereas that is separate and distinct from Part 26 in the Commission's regs.

The Canadian proposal is justified a little bit different than the NRC's proposal. When the NRC proposal first started out back in 1989 and had a significant revision in 2008, the NRC proposal was primarily focused on safety and security and then enveloped

human performance within safety and security. Currently, the fitness for duty program is under the security umbrella, not the safety umbrella. So we are a little bit different than Canada in that respect and, therefore, the justifications are a little bit different as well. We have a strong emphasis on whether or not the individual is not only fit for duty, meaning not impaired, but that the individual is also trustworthy and reliable and can be presented unescorted access to sensitive information as well as special nuclear material. So there are fundamental differences between our justifications and our program outcomes.

The scope of the program is very similar. Your facilities are very similar to the scope of the Part 26 program. However, we do not extend to Category 2 facilities. We extend to Category 1 fuel cycle facilities and nuclear power plants. The Canadian proposal looks at spent fuel storage facilities, whereas Part 26 does not, okay. However, there are staff activities that are looking at that right now, but those aren't -- that's still a staff activity.

The scope is also different with personnel as you -- as everyone has keyed upon that the Canadian proposal is focused on licensed operators and security.

The scope of Part 26 is very specific or explicit in that the individuals covered by the program includes not only those who maintain, operate and implement surveillance of a commercial nuclear facility but have a -- but also provide quality assurance, radiation protection, health or radiation protection chemists and emergency responders just like the Canadian proposal. So our scope is more explicit and I think it appears as though it's broader.

That covered the first question and if you could go to your second question that would be good.

MEMBER SEELEY: Yeah, the second question was around lessons learned with implementation, particularly the drug and alcohol testing programs.

MR. HARRIS: Yeah, the prime -- you know the lessons learned -- you know this is a -- I can't say that this is an NRC official position but as a senior program manager, some of the lessons learned you already covered; the Canadian counterparts already covered. The procedures and policies have to be written in detail and clear. That not only provides for the worker protections that we are all concerned about, it also applies to insure that the program effectiveness is there.

That is a key element. Our lessons learned on licensees that do not have clear policies and

procedures, is that they have difficulty in implementation. Sometimes that causes the regulator; ourselves, to become involved.

A second key element that we found is that collectors need to be vigilant. A pre-access test is most important in identifying those individuals that may have substance abuse problems and that may need treatment even prior to being hired by the licensee. So that was a key element that we have identified as a lessons learned.

A third key element that my counterparts in the Department of Health and Human Services can address is clarified guidance for the medical review officers. With the advent of marijuana use in the United States and prescription drug abuse and the use of even prescriptions legally and not illicitly, medical review officers have been generally given some guidance but I know that the Department of Health and Human Services has extended a lot of effort to improve the medical review officer guidance in the areas of prescription medications.

Let's see, another lesson learned.

Anything, is there anything else that you would like to hear about?

THE PRESIDENT: No, you've been very, very helpful. Thank you. Thank you for that.

I'd like to move on to Dr. Soliman.

MEMBER SOLIMAN: Thank you very much. We know that engineering and the nature of the application, step change application is disruptive and maybe problematic.

The elements of the fitness for duty once approved it has to be -- become like a rule, like it has to be the licensee has to take it and to start thinking about it and implement it. The better approach is if you can apply the rules of the elements of the fitness for duty gradually, so you separate between different elements and you apply one at a time and give thought, propagate for the next one to the employee and for the people, for the workers and then move to the next one and so on until you achieve all the elements of the fitness for duty in that document.

I would like to hear from the industry about that approach and also from the staff after, okay.

MR. SAUNDERS: Yeah, I mean I think you get from the gist of our conversation that we think starting small is the right thing to do.

MEMBER SOLIMAN: Yeah.

MR. SAUNDERS: So in general, yes. Exactly how we will do it I think we have to figure out

yet. But in general if you can narrow the group and allow people to see that there is nothing formidable about this; there is nothing really unusual then moving out beyond that becomes easier, would be my thought.

MR. FRAPPIER: Gerry Frappier for the record.

I think, as you mentioned in your proposal with respect to how to implement this, and taking it in bites that can be chewed, if you like, is a very good one, a very wise one. That is one of the reasons we will be requiring a detailed implementation plan from industry.

Now, industry as part of their management system that they are required to have also has expertise associated with change management, safety culture, those sort of things, and I would expect that they would be conferring with their experts in those areas in putting together the implementation plan once this policy decision, if you like, is made here. So we would be looking for that, and that would be part of our evaluation of the implementation as to whether this is the one that has the most likelihood of success with minimizing the impact on safety culture and systems, if there's such a thing.

So as far as having some kind of phased-in approach that is something that might be appropriate but we

also want to see some progress because it also lends to a bit of confusion if the REGDOC is partly implemented. So we would not want that to take too much time to be able to roll that out.

THE PRESIDENT: Thank you.

Dr. McEwan...?

MEMBER McEWAN: Thank you, Mr. President.

As Mr. Harris was speaking and, I think, as Mr. Frappier who has actually just solidified in my mind why I am uncomfortable with this document, I am uncomfortable for one reason because the CMD is poor. There is just not enough supporting data in it. I have said that and I'll leave it.

But it seems to me if we're looking at issues of fitness for duty, they can be enumerated. I am sure this isn't going to be a comprehensive list but there is the issue of fatigue. We discussed that and I reluctantly agreed to that document but it's important:

Medical and psychological conditions clearly are important and they will vary according to the job description of the individual;

I think there is an element of training and currency of knowledge that is an important component of fitness for duty, and that can certainly be impaired by

some of the other conditions we are talking about;

And then finally there is alcohol and substance abuse. And it seems to me that although there is overlap between medical and psychological conditions and alcohol and substance abuse; it's overlap. They are actually living in slightly separate bins and I think the discomfort that I've got with the REGDOC is that you are actually conflating medical issues and medical conditions with alcohol and substance abuse.

If I use driving, and I think you used driving as an example earlier, we clearly have a policy decision that drunk driving is bad and therefore there is testing for that. That is independent of the testing that we do for older people who need whatever medical you have to do when you reach whatever age.

I think that's why this for me, this REGDOC is a problem is that you have conflated those two issues and you are trying to achieve the requirements for fitness for service based on medical and psychological conditions with those of the policy decision of an absence of alcohol or substance abuse as being a policy decision in what is arguably the most safety-sensitive industry that we have.

And I think if those had been separated in

two separate REGDOCs it would have been much easier for me to really see a path forward and to understand how this can be implemented. And certainly when I look at some of the specifics of what you have put in as requirements in the REGDOCs those conflations become, I think, even more.

Certainly, if I look on page 7 at the guidance you provide for licensees, training and education and awareness for workers who are subject to fitness for duty program, you've got nine bullets there which actually cover about two-thirds of the medical school curriculum.

So there is -- that's my issue and that's why I'm uncomfortable with the way you have presented it; the absence of data upfront and the conflation of two issues in the REGDOC.

MR. LAMARRE: Greg Lamarre for the record. I'll make a couple of comments and then I'll pass it to Mr. Derouin.

So as we outlined at the beginning, fitness for duty is comprised of various elements, and I think it's fair to say that understanding your concern about lumping in, you know, drug and alcohol testing; psychological, medical, those are elements that are well-understood and we could probably talk a little bit further with our colleagues south of the border in terms of

what they are looking for when they look for a fitness for duty program for workers in safety-sensitive positions.

So previously we presented on fatigue and I think there was some good understanding of the role of fatigue in terms of whether an individual is fit and able to perform the job that he might -- that he or she might be called upon. In the same way what we try to do with the medical, psychological, occupational fitness, drug and alcohol impairment is also to present the case that those are other key elements that if they are compromised may impede an individual's ability to accomplish that task when called upon.

So the REGDOC and the premises built on that basis, as I said, I will turn the floor over to Mr. Derouin to talk a little bit more as to the rationale as to why the REGDOC was conceived in this way and any benchmarking that he has available to talk about how regulators do fitness for duty elsewhere as well.

MR. DEROUIN: Thank you. Aaron Derouin for the record.

So as Greg was alluding to, much of the fitness for duty requirements in draft REGDOC 2.2.4 are a combination of medical, psychological, occupational fitness and alcohol and drug testing. Many of the requirements, as

stated in the REGDOC, are carry-over requirements or requirements from RD 363, such as medical, psychological and occupational fitness. The last missing element to this was alcohol and drug testing. Based on some of the evidence that's available from the Canadian Centre on Substance Abuse regarding substance abuse, the rates of alcohol use in some of the populations around, say, Bruce Power or OPG, we felt it was necessarily to integrate the full suite of components of fitness for duty that would address all impairment risk of fitness for duty.

Specifically related to the guidance in section 3.8 on training, education and awareness, in an info doc 0831 published by the CNSC in 2012 in March, report was published based on a contract with Barb Butler, who is a policy expert on substance abuse and policies in the workplace. A large part of her document talked about the four cornerstones that form the foundation for policy details. This is detailed in section 6 of her document. It talked about employee awareness and education, access to assistance, training for supervisors, and investigative tools.

And throughout the document I think you'll find these things placed -- and I think they're well positioned in the document -- to be able to allow the

worker at the plant to know what are the actual policy statements that the licensee has in place, ways to avoid getting into trouble in terms of having a positive test, and providing the supervisors with the required knowledge, requisite knowledge to be able to observe and identify any behaviours that may indicate alcohol or drug impairment or any other impairments to fitness for duty, such as medical issues or diabetes.

So on that note, I'll summarize. The regulatory document, again, is an amalgamation of RD-363. A large percentage of the components are taken from that document. Thank you.

MR. BOUCHARD: André Bouchard for the --

MEMBER McEWAN: So can I just ask why, then, did you separate out as a separate document for us to review fatigue, if you wanted to provide us with a suite.

MR. BOUCHARD: André Bouchard for the record.

I'll answer that question and your previous question a little bit earlier on, if you don't mind.

So we separated fatigue management from the fitness for duty on a wrong assumption that we were going to issue the REGDOC much faster than the fitness for

duty one. It started us into that scope.

The second part of that was also the fact that with regards to hours of work controls and fatigue management, we were also wanting to have a fulsome discussion but specifically related to fatigue and fatigue issues, because we understood that the discussion -- as you alluded to -- the discussion on random alcohol and drug testing is a fulsome discussion by its own. And we wanted to have time, space, and capacity to actually entertain that kind of discussion. That's the answer to your first question.

The previous question is the fact that when we launched ourselves in 2009 in trying to figure how we would actually address the full scope of fitness for duty, we designed what slide 9 states is our fitness for duty assessment framework. This is where you are stating we've separated the medical part from the potential alcohol and drug elements.

One of the reasons for that, I've alluded to it earlier as an example, colour blindness could be a medical condition that does affect a person. And we wanted to have a spot, a place to be able to handle these from an assessment consideration standpoint separated from what could be induced by drug or alcohol.

You're right with the fact that it's a bit of a mixed bag if you have a condition alcohol and drug testing that it's bound to be and linked with a medical condition or psychological condition. On that state, I'd like to get Dr. Davidson to discuss about that intimacy between the potential of alcohol and drugs and the medical conditions.

DR. DAVIDSON: Ron Davidson for the record.

I don't have any problems with combining the drug and alcohol with the rest of the document. The document -- the overlap, as you'd mentioned, is quite significant.

If I have to criticize anything, I'd criticize the experience and the training that our physicians have in terms of identifying drug and alcohol issues. And so there would clearly have to be something that they both in terms -- and I know the College of Family Physicians is working on that right now in terms of getting their doctors involved in understanding how to diagnose, how to treat, how to manage people that have alcohol and drug addictions or drug issues.

I think that clearly anybody that we have in our hire -- at least that the licensee has in their hire

as a physician needs to know occupational medicine, but more to the point needs to also know about alcohol and drugs.

THE PRESIDENT: Sooner or later we got to get down to a decision here, okay. We can go into some philosophical discussion what we should, should not.

So I three option: We reject this document; we modify it; or we come up with something that -- you know, that I mean reject, accept, or come up with something that people can work.

I am stuck still on the industry is going to wear this. And they are sort of our first line on safety. So they have to, A, buy into this and, B, actually come up with a program that's reasonable.

So I'm coming back to the proposal that was in there. And I still think that I want to hear from staff. If you wanted to go in a graded approach, start slow, as they say, get a wind, what would be the minimum package? Is it the package that's saying section 4.1, number 1, number 2, plus the complement, the minimum staff complement? Is that a good kind of a thing to start with? Or can you define it in such a way? You know, you give a number, 950. Are those precisely well-defined who they are and is that a good enough to experiment with this process

as we go through?

MR. BOUCHARD: André Bouchard for the record.

So the document, the REGDOC is built in a different stage, obviously. The first one is describing a set of program measures that needs to be there. Notwithstanding the size of the population, the program measures would be needed, even if only two people would be required to be tested medically, physically, drugs and alcohol. That is a key element of the support of what's essential in order to what we understood be successful in implementing bona fide requirements into a person's job. That's the first step.

We understand the rationale with regards to the point of having sort of a stepped approach with regards to the population. The concern that staff has with regards to this approach, one we discussed, fatigue management, agree and understood who those requirements apply to.

The other part that is important, there is currently requirements in place that this REGDOC was aiming at capturing. These requirements apply to different types of populations which are part of these safety-sensitive positions. As an example, RD-363 for nuclear security

officers. Going step-wise with this REGDOC may force a dual requirement on fitness for duty for security personnel. And that could be a logistic requirement difficulty.

Same thing with emergency responders, which is in CSA N293. That document here that we're talking about was aiming at amalgamating all requirements --

THE PRESIDENT: We understand the document.

MR. BOUCHARD: Good.

THE PRESIDENT: Don't keep -- stop selling -- telling me what would be a minimal package that -- the industry came up with a proposal. I think somebody in the back want -- M. Frappier, you want to talk about that?

MR. FRAPPIER: Thank you. Gerry Frappier for the record.

I think that as, you know, we listen to this discussion we can understand there's perhaps two big things going on here. One is a policy decision as to whether we want to require things like drug and alcohol testing. And I think that's a major decision that the Commission has to make. And no matter what the population

is that we're going to do, that would be a major decision.

As the person who's really looking at how we're going to be implementing this, I know that there'll be some controversies around it. And so implementation needs to be clear, needs some help in being very clear.

I think what industry is proposing with sort of paragraph 4.1 where we say this document will apply to 1 and 2, if you like, those are very clear populations. We know who they are. There's not going to be any controversy about those. And so at least it would be clear that the -- from a implementation perspective, we need to do this.

Whether the REGDOC needs to then be updated at a later time, that would be decisions perhaps that could be made based on analysis or on --

--- Off record discussion / Discussion officieuse

MR. FRAPPIER: And so that we can always, you know, modify it -- modify it later on.

With respect to the nuclear security personnel, there's certainly security officers and nuclear response force. Maybe we need to look at those as to whether they're a hundred percent in or provide guidance of some kind as to when they should be or not.

I think the point that the Commission

made, though, with respect to providing industry with some flexibility, and so there may be opportunity to perhaps more put in guidance, the paragraph that talks about licensees instead of "shall perform a risk," "could perform a risk" or may do that and identify other safety-sensitive positions that they want in there.

I think the main point I wanted to make is that if we move forward on this, the more clarity we have, the easier it's going to be from an implementation perspective. The more we have opportunities for confusion, the more we have opportunities for people to say this is bad, you know, a bad program implementation.

THE PRESIDENT: Thank you.

MR. LAMARRE: Can I jump in there as well, just add to Mr. Frappier's points.

I think what I'm hearing from the Commission is that there's a desire and expectation that we go back and look at this population and how it's determined and perhaps propose some alternatives.

The one thing I'd want to highlight is that there are some existing requirements in the LCHs right now that point to ERTs and training and there are requirements on NSOs, NRFs. And we want to make sure that we don't try to wordsmith this on the fly and that we

ensure that we continue to embed those clear regulatory requirements that currently exist in the forward path as well. So that's what I would offer as well.

Thank you.

MEMBER McEWAN: Could we actually see a summary of those requirements? That would have been really helpful --

THE PRESIDENT: Yeah.

MEMBER McEWAN: -- for this discussion.

MR. LAMARRE: So we could certainly do that. So for RD-363 I could ask Mr. Pat Adams. He could go through --

THE PRESIDENT: Not now. Not now.

MR. LAMARRE: Okay.

THE PRESIDENT: Not now.

MR. LAMARRE: Okay.

THE PRESIDENT: Not now. I'm still going through the question period. And I don't even remember where I left it.

MEMBER DEMETER: What I've sort of evolved in this discussion is an issue of the maturity of this document as it stands. And so as an industry, going back to the difference between industry and staff with regards to the two paragraphs that follow 4.1.1 and 4.2 -- 4.1.2 of

the REGDOC, the addition of the safety-sensitive positions.

For me it's kind of confusing. I would think that in an industry you would have specified job classifications known pre-hoc, and you could choose from that list of specific classifications of -- that are included in the safety-sensitive positions and come to an agreement as to which of those categories or those job classifications should be under this REGDOC.

There seems to be a lot of uncertainty about something that -- I don't understand why there's uncertainty, because it's left to -- it seems to be a lot of "licensee shall do this and tell us" -- it's like tell us what you do, and we'll tell you if it's okay. But it really -- I mean, there's cooks and there's shopkeepers and there's stock keepers. There's job descriptions.

So to me it seems more simple to say, Here's the list of the 50 different job classifications that our safety-sensitive positions include, and then you negotiate amongst those which you think are the high priority for these assessments. And then everyone knows what they're dealing with.

Part of our decision-making or my decision-making is, you know, maybe philosophically to support the position of staff but perhaps say that the

document needs to be matured before -- because it's a document that has an impact on the industry.

MR. LAMARRE: Greg Lamarre for the record.

Perhaps I'll make a couple of comments and pass it to M. Bouchard to add.

So a couple of points I think are worth mentioning. You go to the comment, Mr. Commissioner, about why didn't we provide a list of positions and say explicitly these are the ones that we're talking about. Well, that's not exactly the way that we regulate. We're a performance-based, not a prescriptive, regulator. And that's typically how we develop our REGDOCs.

And we allow the onus of determining, in this case, who is part of the SSP and not, with the operators, the ones who are responsible for safety and understand the operations better than the regulator does.

We have specified a couple of those positions, because those are very clearly ones with a very direct impact. The certified operators, we certify them. The DO certifies them through the powers of the Commission because of the fact that they've got a very direct and immediate impact on safety, clear-cut.

But there are other positions within the organization, and the minimum staff complement analysis

allows the licensees to bring forward -- These are our key people; they require specific training, and they have specific roles in the case of accidents. These are the people that we want to concentrate some effort on. And we took that philosophy in trying to define this new concept of the SSP.

You also asked about, well, how long has this been around for. Well, the SSP concept was defined within the fatigue management REGDOC that came out, and as we've mentioned a couple of times, the licensees have an action on them right now to come back and do an assessment of who constitutes their SSP.

And perhaps M. Bouchard can add to anything that I might have missed there.

THE PRESIDENT: But you see -- you see how you complicate life for us here.

You were very prescriptive on the super sensitive position. There is no may, but, maybe. So you have a community. You know exactly what needs to be done. And I think the industry said they agree -- reluctantly, but they agree. So that's going to be done.

So you're starting with the -- this is the wind that's going to be the culture change because you're going to have drug and alcohol and random testing, all of

this.

So what we coming -- what we don't feel comfortable about, so what's next? What more position you want to do?

So number one, none -- no other position will be in the drug and alcohol random testing. So what are the position that you now know should be in a for-cause testing? So you can build a reasonable kind of a graded approach moving forward slowly.

So as you remember some of us was telling you start with drug and alcohol only. Don't complicate life here. Now that you get us a REGDOC that includes all of them, we are trying to figure out where is the additional to the super sensitive position that we have to go forward with. And that's where I think the difficulty here --

I think what the industry doesn't like is that all 12,000 now will have to be reviewed for job -- that's what it says in terms of review. You will -- on risk-basis, you will look at all your population and determine which one is risk-basis -- risk-informed.

So that's the kind of a difficulty that we have in trying to get to a consensus here.

MR. JAMMAL: Sir, if you'll allow me.

It's Ramzi Jammal for the record.

Just from experience negotiating with diplomats and everyone else, and I think we -- I'm going to give a proposal, stick my neck out as chief regulatory operations officer.

I think we're going in circles, and sometimes we go far deep and sometimes back up. There are two distinct elements for the Commission to render a decision on. It's the policy, the policy -- you drive the policy; not an issue.

The discussion we're taking place right now is section 4.1, item 1 and 2. We're saying that this is the policy, this is the shell. What I'm going to propose is allow us time, probably at lunch break, for us to propose a text, that we will discuss with the industry, so we come back to you with a very specific recommendation for you to render a decision upon.

The reason I'm saying this, for us to go back and redo this document, we're going back into years and where we do not want to be.

So we can determine a graduated approach in the language that currently we -- that's my proposal to you -- and then we will report to you, the Commission, on an annual basis the progress with respect to the

implementation of this document. Because don't forget the fact that the ROR exists and we can provide you with an update.

So if you give us -- if you accept this proposal, we can work on a language so that you can have a very much focused text before you, and then we can report to you on the graduated implementation, rather than ad hoc, will be proactive with respect to the Commission.

THE PRESIDENT: So maybe it's a good time now for us to break for lunch and see what you can come with, and for our considerations. And we will resume the questioning at that time.

So we come back at 1:30.

Thank you.

--- Upon recessing at 12:32 p.m. /
Suspension à 12 h 32
--- Upon resuming at 1:33 p.m. /
Reprise à 13 h 33

THE PRESIDENT: Okay, we are back and back to -- we were given a one-pager here that I assume was agreed to on all sides, and I think the Commissioners have seen it.

Okay, go ahead, Mr. Jammal.

MR. JAMMAL: It's Ramzi Jammal, for the record.

I would like to table to the Commission amendments that we, Staff, worked on it. For the record, we applied the two key systems. So in other words, our specialists gave the technical recommendations and we updated the modification before the Commission.

So, for the record, Section 4 of the REGDOC-2.2.4, Fitness for Duty, has been amended. So Section 4.1, which is we consider the policy element, we've added another group under, "Safety Sensitive Position," shall include: one,

> "certified workers, except for certified health physicists" (As Read)

that's an amendment. We are exempting the health physicist.

Two, that's consistent with what's previously presented to the Commission. Two:

> "The following security personnel, nuclear security officers, on-site nuclear response force members, and designated non-NRF personnel."

Three, is highlighted in yellow, it is a

modification, is "ERT/Fire Brigade."

The paragraph ends with:

> "the licensee shall list all of safety-sensitive positions and their governing documents." (As Read)

Under guidance, we are providing clarity with respect to how the licensee may perform a risk-informed analysis to identify any other safety-sensitive positions. The positions that are part of the minimum shift compliment at high power reactor facilities "may" be considered as safety sensitive. That is the option and opportunity to provide the licensee the categorization to be performed by the licensee.

Then the risk-informed analysis to identify safety-sensitive positions "may" consider the following, and "may" was replaced -- at the time was a "should."

So before you here is this tabled document. Staff did not have the time to review the cascading element associated with this. Under medical testing for the table, this will be amended. So staff are proposing the following recommendation to the Commission.

This is tabled before you, administratively we'll make the amendments to the rest of

the document to match this amendment. We'll present it to you for your consideration and deliberation, and we will administratively, secretarially, provide it to the Secretariat for you to review and will give copies to the industry.

We had a verbal discussion with the industry and I'll provide them with their own opportunity to speak if they agree or not, but in principle we reached an agreement that we do not compromise safety. We keep the responsibility of determining the safety-sensitive positions with the licensees because they are ultimately responsible for the safe operations.

So that's what the Staff recommendation is for the Commission to take into your consideration. Thank you.

THE PRESIDENT: Does the industry want to speak to this now?

MR. MANLEY: Robin Manley, for the record.

For Ontario Power Generation we believe this is a very good and workable amendment, and we would support it. Thank you.

MR. SAUNDERS: Yeah, same for Bruce Power actually. A very good discussion and certainly appreciated the opportunity to get into the details there.

MR. NOUWENS: Jason Nouwens, for the record, New Brunswick Power.

Again, it was a very good discussion and it's nice to see that there's some discussion going on about the requirements, and we're happy with the changes.

MR. COTNAM: CNL here, Shaun Cotnam, for the record.

Again, it was a very frank discussion. Of course we would like to see the actual cascading words, but in principle it looks like a good solution.

THE PRESIDENT: Okay. Who wants to ask --

MR. BOUCHARD: Just one quick point. Andre Bouchard, for the record.

We were contacted by the Canadian Human Rights Commission representative during lunchtime to make sure that we were communicating to the Commission that their position has been formally documented in their letter of 2012, and to remind that obviously when we speak about Canadian Human Rights it's our interpretation, but their submission still stands as being what is current from their position with regards to their mandate and interpretation and position on our initiative.

THE PRESIDENT: Okay. Who wants to start with a question? Go ahead.

MEMBER DEMETER: Just with regards if there's an emergency incident, is the health physicist part of the early response team, in that they might be doing monitoring, assessment, for potential dose ramifications to emergency workers, or is that done more retrospectively?

We are curious, or I'm curious, about that they've been excluded and I see them as an integral part of emergency response at the time in our site, but I don't know in a nuclear power plant what their role is in an emergency.

MR. MANLEY: Robin Manley, for the record.

Perhaps I can speak to that knowledgeably, as I have been previously a CNSC certified Senior Health Physicist.

So the role of the certified senior health physicist is more of a programmatic one on a day to day basis. There will be specific work activities that you're ensuring that the radiation protection program provides appropriate degree of safety for personnel. That includes review of high-hazard radiological work plans. But those are not so much an emergent emergency event.

In the event that a nuclear emergency situation was declared requiring the establishment of our site management centre where we bring in our sort of

broader management team, we do have a radiation protection person in that function, however that does not require a certified health physicist for that role. Just like the emergency response manager is not necessarily someone certified by the CNSC.

Within the plant proper, the actual ongoing operation of the plant and protection of the workers remains the accountability of the shift manager. It's a CNSC certified position and therefore a safety-sensitive position.

MEMBER DEMETER: So, as I understand that, the certified health physicist isn't a first responder?

MR. MANLEY: That is correct.

MEMBER DEMETER: Thank you.

THE PRESIDENT: Dr. McEwan?

MEMBER McEWAN: Again, this is a very simple question, naïve question. If I just look at the table it's several places. Alcohol and drug testing by work group and circumstance for cause post-incident. I'm not sure what that means. Is the incident the cause? If there is an incident, then therefore there will be mandatory testing, or does there have to be an incident and some other cause that would indicate reasonable grounds for testing?

MR. DEROUIN: Aaron Derouin, for the record.

So just to clarify on post-incident testing, it's our understanding the practice is generally related to any identification of human error, so human acts or human omissions that could be attributed to the event. So upon identifying human error it would be on a licensee's, in the post-incident circumstance, to conduct testing.

MEMBER McEWAN: So it's still not clear to me that there would be an incident, there would be an investigation, there would be a determination of cause or error, and then there would be a decision on whether or not testing was made. So that could be weeks after the event and the testing would be irrelevant.

MS HUNTER: Lynda Hunter, for the record.

Just to clarify. Testing would typically be conducted post-incident if an action may have contributed to the event. So if there's a possibility that a human action may have contributed to the incident, then typically you would test. That way you would not have to, you're correct, wait for a root-cause analysis, for example, to determine the cause of the incident.

MEMBER McEWAN: That just, to me, seems

not practical in the likely real world.

THE PRESIDENT: Okay, let me try and understand. But a supervisor can ask for a test for cause because they suspect something all by themselves. So it's really an observation kind of requirement to do rather than an investigation. That's the way I interpreted that.

MR. BOUCHARD: Andre Bouchard, for the record.

Your interpretation is right. That's one of the entry points. The licensee can perhaps describe their process to approach an event. There's several layers to that process; there's some parts that are immediate, and there's others, as was said earlier, that are longer and vested root-cause analysis which take more time.

So what we're asking from the REGDOC standpoint is just to go and leverage that multiplication of processes and make sure that at a given time when a for-cause potential is identified, then they would kick in some of those evaluations. But I would ask the licensee to provide you with their approach to events.

MR. SAUNDERS: Yeah. I mean, currently our for-cause event really is just for-cause. If we have reason to suspect that there may have been an impairment or some other issue, a health issue or something that either

an incident or just doing routine work, then we would to the for-cause for that. We don't have one that's tied to an incident, so this is something we would have to define much more clearly.

We don't have those definitions yet, so how big an incident, for example, what's involved. These things, we would have to actually sit down and determine exactly what they are. We have not done that today. Today, it is simply if, for some reason, the supervisor or the manager believes that there is an issue and that testing is required, then we can do that. We have a process with our unions and our employees that we go through to accomplish that, and it's not based on incidents per se.

THE PRESIDENT: Do you actually measure or record such incidents that are for-cause, that you suspected either drug, alcohol or impairment of any shape? Do you keep track of that?

MR. SAUNDERS: We do know what they are, we don't publish them, no. There were a few, I can tell you, but we do keep track, we do know, yes.

THE PRESIDENT: But it is in some of your records of your employees or whatever?

MR. SAUNDERS: Yeah, absolutely. Yeah. Now, I mean in some cases it depends on the results where

it stays, it may be in the person's medical records, so it may not be accessible in general terms. But if you do a test and it is indeed positive in some form that you need to take corrective action, then that will end up in our sort of disciplinary or accommodation process, and for sure will be tracked in our records.

It depends on where the dividing line is. If the conclusion is that it impacted the work and there was an issue to be resolved then, yes, we will have that in our records.

If it was not concluded that it had an impact, then of course that's our personal information and we wouldn't have that.

THE PRESIDENT: So I may be totally off base here, but now with enhanced security concerns about inside jobs, do you do any investigation, suspicion about reliability of employees, et cetera? I'm trying to use delicate language here.

MR. SAUNDERS: Yeah, absolutely. If concerns are raised, we do, yes. It's a little bit more high profile today I guess because of security, but it was always there for safety and other reasons if people were thought to be acting erratically or there was some issue or something, we've always had a process that allows that to

be identified confidentially, and then we will investigate it and determine whether it needs any formal follow-up or not. I think we're all the same in that within the industry. That's been routine for as long as I can remember.

Security is a little added piece now, but it's not fundamentally different.

THE PRESIDENT: Question?

MEMBER McEWAN: I mean, just if both are for-cause, do we actually need both columns?

THE PRESIDENT: Sorry, what was the question?

MEMBER McEWAN: So, I mean, we have for-cause, why do you need to discriminate between for-cause for reasonable grounds whether it's pre or post-incident? I mean, if we listen to industry, this is an observational platform that they use in day to day to day.

MR. LAMARRE: Greg Lamarre, for the record.

I'll pass it to Lynda Hunter in a minute and also make note of the fact we still have the NRC colleagues on the line and aware of the fact that through our comparison and benchmarking activities, they've got a very similar approach, they might be able to talk about

the rationale as to why that type of testing has been set up in the NRC and that has had an influence in our approach as well.

But I'll pass it over to Lynda to provide a little more and then she can pass it to Mr. Harris at the NRC, if available.

MS HUNTER: Lynda Hunter, for the record.

So just to clarify, the elements in the testing program are very well established circumstances for testing. So across the industry these are all standard categories of testing per se that are included.

So for-cause, there's definitely two element of for-cause. Typically, that would be your post-incident which you would test, as I mentioned earlier, if an action may have contributed to the incident. So you don't have any necessary cause to suspect the worker of being impaired at that point in time, it's just that you want to rule out that there was an alcohol or drug impact in that.

So post-incident, the action may have contributed to the event, but there's no necessarily performance indications that the person is impaired.

The second type of for-cause is the reasonable grounds, and for that one it's typically based

on supervisor awareness or peer observation, et cetera, as well, and that's when there really is an indication that somebody's possibly impaired.

So those, as indicated in many of our slides, is your standard testing circumstances throughout the industry, and we have data per all of those circumstances.

Sorry, just to clarify, we actually had them in the same section in the REGDOC originally and, based on comments provided to us for clarity, industry indicated that they should be separated.

THE PRESIDENT: Okay. Mr. Seeley.

MEMBER SEELEY: So assuming that this group was narrowed down per the definition that you've provided here to us after lunch, if I was to look at Appendix A, Table 2, and essentially you would take out the bottom two rows for the alcohol and drug testing, you would end up with roughly half the group gets random testing and the other half of SSPs would not.

So again, I don't know, it would be about providing the rationale for that.

MS HUNTER: Lynda Hunter, for the record.

Just to clarify, as it was presented in our slides, the choice for including the certified workers

with the exception of the health physicist as well as the on-site nuclear response force was based on risk and the fact that they are those workers with the most immediate and direct impact on safety and security. So we stand by that and the other workers, as indicated in that table, would be subject to for-cause, reasonable grounds, post-incident and follow-up testing.

THE PRESIDENT: First, of all I want to understand why the word "may" was better than "should." Just humour me about that.

MR. SAUNDERS: Frank Saunders, for the record.

I guess that's just experience. I have found that there's no real differentiation between should and shall in terms of the regulatory documents, they get interpreted exactly the same way.

THE PRESIDENT: You know, as regulators, we don't mind passing the baton to you, but be believe it should be "should." At least I believe it should be "should." Because we're talking about a safety position that you will identify. So we really pass it up to you to do this. The "may" -- anyhow, I'm not going to go to the wall on this, but I think that there's a difference between "should" and "may" for good reasons.

So if I understand what we have in front of us, Staff will go back to redo this and put in some of the -- they're very focused, it's the opportunity also to clarify with industry some terms that may be unclear, and then bring it back to us to take a look at for approval.

Before we close this thing, I think I would be remiss if I don't invite at least one union member to come here and tell us how happy they are with this consensus that I think is coming here from industry and the regulator.

Who from industry would like to come and speak on behalf of the union -- sorry, from the union. It's getting late, eh.

MR. TRAVERS: For the record, my name is Scott Travers, I'm the President of the Society of Energy Professionals. Beside me is my colleague Bob Walker from the Power Workers' Union.

So thank you very much for the opportunity. I may not quite deliver on enthusiastic support, but thank you, President Binder, Members of the Commission, and CNSC Staff.

The Society of Energy Professionals did make a submission, multiple submissions through the process, and are submission is still our position on this

REGDOC, and I would encourage the Commission to have a look at our submission. But I'd like to make some general statements today about where things are sitting. In particular, I'd like to kind of refocus us back to the policy question. It feels a little bit, from my position, that that got rather glossed over in our discussions today.

Before commenting on draft REGDOC-2.2.4 I'd just like to take a moment to make sure the Commission understands how important safety is to the members of the Society. Our members work in Ontario Nuclear Power Plants and they're the first and most directly affected by nuclear safety. Moreover, their families live and work in the communities around the plant. So I would ask the Commission to please understand that conventional and nuclear safety are foremost in our members' minds, their lives depend on it and the lives of their families depend on it.

The impressive safety performance statistics that were viewed in yesterday's report on nuclear power plants are not an accident. They are the result of a strong safety culture that our members are proud to be a part of. Our members rely upon one another and their co-workers to keep themselves and their families safe. That strong team culture is part of what makes our nuclear power plant so safe. Please understand that no one

is more concerned with fitness for duty than our members, which is why the current fitness for duty programs at the workplaces where we represent members are so successful already.

It's with that mindset that the Society has reviewed draft REGDOC-2.2.4, and we're very disappointed that, despite our comments, the regulatory scheme set out in this REGDOC mandates workplace drug and alcohol testing in the absence of reasonable cause to suspect impairment.

Jurisprudence regarding drug and alcohol testing from Canadian courts and boards of arbitration support the Society's position, that the testing contemplated by this REGDOC is an unreasonable invasion of employees' privacy rights under Canadian Charter of Rights and Freedoms.

It's unreasonable, because there is no evidence of a problem which must be addressed and no evidence that this testing that's being proposed would actually improve public safety.

As the CNSC confirmed in its discussion paper, Discussion 12-03:

> "This testing is not a response to any evidence of safety issues related

to fitness for duty or substance abuse in Canada's nuclear industry." (As Read)

Quite simply, the CNSC has not identified any deficiencies in the area of fitness to work in the Canadian industry that would justify such an intrusion outside of particular circumstances where there are reasonable grounds to suspect impairment.

Moreover, there was simply no good evidence that random pre-placement or post-incident drug testing is an effective deterrent.

Furthermore, it remains undisputed that the drug testing required by REGDOC-2.2.4 indicates past use, but cannot detect current impairment for drugs.

It's the position of the Society that random and pre-placement drug and alcohol testing will not improve safety because existing fitness for duty programs are effective. The existing human performance programs effectively minimize the risk of impairment related to incidents.

These programs are comprehensive and effective, they address all issue that may impact on fitness for duty not just impairment from drugs or alcohol. REGDOC-2.2.4 unfortunately mandates drug and alcohol

testing in circumstances where such testing is an unnecessary invasion of employees' privacy and dignity.

The Society is concerned that subjecting employees to these tests will have a negative impact on employee engagement with the safety culture, which is currently very high. By undermining the current strong safety culture this program would in fact be detrimental to public safety.

In summary, there's no evidence of a drug or alcohol problem among employees of CNSC licensees and there's no evidence that the testing program in REGDOC-2.2.4 would improve public safety. The Society encourages the Commission not to move ahead with this REGDOC given the profound impact on the rights of our employees and the rights which are being recognized by the Supreme Court of Canada, as the Society has already pointed out.

Thank you.

THE PRESIDENT: Thank you. Any final comment here? Okay, thank you for all the information. We will look forward and we'll deliberate on the final document that we get.

Thank you.

We have the next item coming up.

--- Pause

THE PRESIDENT: Okay. While everybody's setting up, let me read.

The next item on the agenda is a decision item on the regulatory document REGDOC-1.1.3, Licence Application Guide, Licence to Operate a Nuclear Power Plant. This is outlined in CMD 17-M36 and 36.A.

I understand that CNSC staff are ready to make this presentation and this time it is Ms Owen-Whitred who will make the presentation.

CMD 17-M36/M36.A

Presentation by CNSC staff

--- Pause

THE PRESIDENT: Any time you are ready, I will re-introduce you.

MS OWEN-WHITRED: Bonjour, Monsieur le Président, membres de la commission. My name is Karen Owen-Whitred, Director of the Regulatory Framework Division. With me today are Mr. Christian Carrier, Director of the New Major Facilities Licensing Division along with Ms Kimberley Campbell, Director of the Power Reactor Licensing and Compliance Integration Division, Mr.

Brian Gracie of the Power Reactor Licensing and Compliance Integration Division, Dr. Doug Miller, Lead Technical Advisor for the Directorate of Regulatory Improvement and Major Project Management and other CNSC staff available to support and answer any questions you may have.

We are here today to request Commission approval of REGDOC-1.1.3, Licence Application Guide, Licence to Operate a Nuclear Power Plant.

REGDOC-1.1.3 describes the requirements and guidance for submitting a formal application to the CNSC to obtain a licence to operate a nuclear power plant in Canada. It identifies the information to be included in the application.

If approved by the Commission, REGDOC-1.1.3 will be an important document in the CNSC's regulatory framework. This document will be used by applicants to prepare a licence application for new nuclear power plants, or for a licence renewal for existing nuclear power plants.

It will also be used by CNSC staff to assess licence applications for proposed new NPPs and for licence renewals of existing NPPs. CNSC staff will use the assessment to provide a recommendation to the Commission on approving those new or renewed licences.

Before discussing the document in detail, I will briefly review the role of regulatory documents and where REGDOC-1.1.3 is situated within the CNSC's regulatory document framework.

To enhance accessibility of our regulatory expectations, the CNSC structures our regulatory documents according to the framework shown here. This slide shows where REGDOC-1.1.3 fits within the CNSC's broader document framework. It is situated within section 1.0, Regulated Facilities and Activities in the subsection for Reactor Facilities.

This section covers licence application guides for nuclear power plant licences for other lifecycle stages such as licence to prepare a site and licence to construct a nuclear power plant.

Please note that one additional change would be made to the document if it is approved by the Commission for publication. This change was reviewed and approved by senior CNSC management, however, it was not reflected in the package sent to the Commission Members and to the general public.

In order to be more consistent with the information in REGDOC-3.2.2, Aboriginal Engagement, which was published in 2016, the text in this draft regulatory

document would be revised as follows:

On page 72 in section 5.3 entitled Aboriginal Engagement, the wording would change from -- and I'll read it:

> "In accordance with REGDOC-3.2.2 Aboriginal Engagement, applicants are encouraged to provide the CNSC a summary of their engagement activities with Aboriginal groups." (As read)

This language would change to:

> "REGDOC-3.2.2 Aboriginal Engagement sets out requirements and guidance for licensees whose proposed projects may raise the Crown's duty to consult." (As read)

Again, this change was approved by senior CNSC management and was communicated by email to all stakeholders who commented on the draft document during public consultation.

At this point I'll turn the presentation over to Ms Campbell.

MS CAMPBELL: Good afternoon, Mr. President, Members of the Commission. My name is Kim

Campbell. I am the Director of the Power Reactor Licensing and Compliance Integration Division.

I will now outline today's presentation. I will start by providing an overview of the CNSC's regulatory framework for licensing and compliance of nuclear power plants.

Next, we will explain the details on REGDOC-1.1.3 that is provided today for Commission approval. Specifically, we will present the objectives, the process and results of public consultation, including the key concerns from the public comments and how CNSC staff have addressed them.

I will provide a brief explanation of how this regulatory document, if approved, would be implemented.

Finally, we will finish our presentation with CNSC staff's conclusions and recommendations.

The CNSC regulates nuclear power plants through the *Nuclear Safety and Control Act* and the regulations made under it. Subsection 24.4 of the *Nuclear Safety and Control Act* states that the applicant:

> "...shall be qualified to carry on the activity that the licence will authorize the licensee to carry on;

> and
>
> ...in carrying on that activity, make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed."

To meet this responsibility, CNSC staff have always required the applicant or licensee's safety and control measures to be considered and evaluated before making any recommendations to the Commission for licensing decisions regarding NPPs.

Since 2009 CNSC staff have used the SCA, Safety and Control Area Framework, to ensure that all safety items have been included for consideration and evaluation. We will review the 14 safety and control areas on the next slide, the other matters of regulatory interest as well, including reporting requirements, public and Aboriginal engagement and financial guarantees.

These topics are all addressed in the Licence Application Guide for a Licence to Operate a Nuclear Power Plant.

Here are the 14 safety and control areas, or SCAs. As you can see, they cover a wide range of considerations and provide a logical framework for ensuring that comprehensive safety information is provided. The SCA framework provides a structure whereby applicants, licensees and CNSC staff can quickly and easily check to ensure that all necessary information is provided in sufficient level of detail for a licence application to be assessed and a recommendation to be made to the Commission.

This slide illustrates the CNSC's lifecycle approach to the licensing of nuclear power plants and indicates where this REGDOC fits into the lifecycle.

Please note that the animated highlights that will appear in this slide shortly simply highlight the specific topic that is being discussed.

The lifecycle approach enables the CNSC to ensure review of all safety and control measures and solicit public engagement throughout the lifecycle of a nuclear facility. Note that the lifecycle also includes decommissioning, however, REGDOC-1.1.3 does not apply to decommissioning phase.

The lifecycle starts with site evaluation and licence to prepare a site. In a future Commission meeting, you will be asked to consider REGDOC-1.1.1 Reactor

Facilities, Licence to Prepare Site and Site Evaluation of New Reactor Facilities which is currently under development.

Next is the construction of the nuclear power plant. Again, REGDOC-1.1.2, Reactor Facilities: Licence to Construct a Nuclear Power Plant, is currently in the process to be republished as REGDOC-1.1.2, Reactor Facilities: Licence to Construct a Nuclear Power Plant.

REGDOC-1.1.1 and REGDOC-1.1.2 do not apply to existing nuclear power plants. They are being developed in anticipation of applications to build a new nuclear power plant. Together these regulatory documents will introduce regulatory efficiencies and will improve harmonization and coordination efforts.

For operation of the NPP, and if approved, the licence application guide will be used to prepare and evaluate licence applications for proposed new facilities and also for applications for renewal of licences for existing facilities. For clarity, for a new facility operation commences when fuel is loaded. For example, no fuel may be loaded before the licence to operate has been granted by the Commission.

For licence renewal, the REGDOC also relates to the periodic safety reviews, or PSRs, which is

highlighted in orange on this slide. PSRs are typically conducted by licensees for a licence renewal. If approved, licensees will use REGDOC-1.1.3 in conjunction with REGDOC-2.3.3, titled Periodic Safety Reviews, to prepare an application for licence renewal.

In performing a PSR, the licensee is required to conduct comprehensive reviews addressing all aspects of safety in order to conduct a global assessment and develop an integrated implementation plan that describes safety improvements to be carried out by licensees during the next licence period.

I will now turn the presentation over to Mr. Christian Carrier to discuss the development of the REGDOC.

MR. CARRIER: Good afternoon, Mr. President and Members of the Commission. My name is Christian Carrier and I am the Director of the New Major Facilities Licensing Division.

The document before you today describes the requirements and guidance for the content of an application to obtain a licence to operate a nuclear power plant in Canada. The document is applicable to operation of new nuclear power plants and for renewal of their licences.

This regulatory document effectively codifies the current practice for such applications, which was traditionally documented through formal correspondence. The benefits of the document are to provide clarity of expectations and ensure consistency in practices.

The document points to applicable CNSC regulatory requirements and to specific industry and international standards. These originate from organizations such as the International Atomic Energy Agency, the Canadian Standards Organization, which produces the CSA standards, and the American Society of Mechanical Engineers, or ASME.

As mentioned earlier, the document is intended to be used by applicants to prepare their applications and by CNSC staff to assess such applications prior to bringing their recommendation to the Commission for a licensing decision.

Once a licence has been granted by the Commission, the document safety and control measures described in the applications and the documents supporting the applications will form part of the licensing basis for the nuclear power plant.

A 60-day public consultation period was held on the draft document from May 31st to July 30th,

2016. During this consultation period comments were received from four respondent organizations, namely: Bruce Power; the Canadian Nuclear Association, or CNA; New Brunswick Power; and Ontario Power Generation.

A total of 400 individual comments were received. In some cases comments were either identical or equivalent. Those were regrouped, resulting into 127 distinct comments.

Following the consultation period, submissions from respondents were posted for two weeks on the CNSC website for feedback on the comments received. This activity took place from August 22nd to September 6th, 2016. No additional comments were received.

As a result of the feedback received during the consultation process, the REGDOC was revised. The revised document and the disposition table outlining how comments were addressed were emailed to the original respondents in early May 2017.

CNSC staff organized a workshop with industry stakeholders having an interest in the document. This workshop was held on May 31st, 2017. The purpose of the workshop was to discuss the comments received and present how the document was modified to address them.

The workshop contributed to further

refinement of the text and helped in coming to a mutual understanding in certain areas. This included expectation on intent and level of details in some areas, and generally on the role of the regulatory document in the regulatory process.

The four organizations that originally commented on the document were invited to participate in the workshop.

Additionally, three other organizations attended as observers: the Canadian Nuclear Laboratories (CNL); the CANDU Owners Group (COG), which is the umbrella organization for all current NPP licensees in Canada; and Amec Foster Wheeler, who offer consultancy, project management, and operations and construction services in specialized power equipment.

In the following slides, we will describe the feedback from stakeholders in more detail.

CNSC staff addressed all of the stakeholder comments. Most comments were readily resolved. CNSC staff either revised the document to address the comments or provided an explanation for why they were not accepted.

CNSC staff found the comments to be helpful, especially in clarifying the intent or in

identifying areas where editorial changes strengthened the text.

The following slides will focus on four key concerns that were raised during the public consultation period and listed on this slide.

One dominant concern raised by stakeholders related to the role of guidance and the overall role of the document. Stakeholders also expressed the opinions that the draft regulatory document is setting new requirements and that guidelines are not requirements.

As described on this slide, CNSC staff responded that this regulatory document codifies the information needed to ensure that an application for a new or renewed licence meets regulatory requirements; it adds clarity, efficiency and effectiveness to the licence application process; the document provides clarity on establishment of the licensing basis and ensures that specific regulatory documents and applicable standards are included in the licensing basis.

The information in REGDOC-1.1.3 is in line with international practice, such as information provided by the International Atomic Energy Agency. However, REGDOC-1.1.3 is more specific to the Canadian context, specifically where it provides references to CNSC

regulatory documents and CSA Group standards.

Requirements language is used where necessary, for example, for information originating from the *Nuclear Safety and Control Act* or regulations made under the Act; for codifying existing practice for licence renewals; or to ensure that specific regulatory documents and CSA standards are included in the licensing basis.

By following the information requested in REGDOC-1.1.3, applicants will submit the appropriate level of information to demonstrate that they are qualified and will make adequate provisions to undertake the activity to be licensed, in this case the operation of a nuclear power plant. This information is essential for CNSC staff to be able do a fulsome review and provide a sound basis for a recommendation on licensing to the Commission.

Some stakeholders commented that overall, the draft document suggests too much documentation be submitted for a licence application and that it includes a large volume of information that would be submitted with an initial application and later updated through the Licence Conditions Handbook document version control process.

CNSC staff responded that by nature, a licence application for a licence to operate a nuclear

power plant does require a lot of information; a major objective of the regulatory document is to ensure that an application for a licence to operate an NPP includes all of the information necessary for CNSC staff to do a complete review of the licence application; the information requested is consistent with the documents from the IAEA.

Stakeholders were reminded that an application could reference previously submitted information, including, if applicable, any information submitted in support of a periodic safety review. On that subject, Appendix D was added to the regulatory document to provide guidance on how these references might be documented in an application.

Stakeholders noted that the text should not paraphrase specific requirements contained in other CNSC regulatory documents or other standards. In such cases, they recommended simply referencing the applicable document, code, or standard.

CNSC staff reviewed the text in the regulatory document and removed paraphrasing of any specific requirements to the extent possible and replaced it by appropriate references to the regulatory document or standard. However, some paraphrasing of text was kept in the document when CNSC staff felt it added to the context

and clarity of expectations on content of an application.

Stakeholders also commented that the use of appendices to note CNSC regulatory documents and other codes and standards will be problematic. These documents frequently change and in some cases there are ongoing discussions about whether some documents should be incorporated into the licensing basis.

CNSC staff responded that the intent of Appendix C, and more specifically Tables C.1 and C.2, was to ensure that key CNSC regulatory documents and CSA standards were incorporated in the licensing basis. The tables provide open and transparent documentation of these documents. This information is useful for new applicants and other non-industry stakeholders.

In addition to this licence application guide, CNSC licence application notification packages will provide supplemental facility-specific guidance to support the use of Appendix C. For example, the CNSC will identify the specific versions of the documents in Tables C.1 and C.2 that need to be addressed as well as any new applicable documents issued after publication of REGDOC-1.1.3.

With regards to implementation, REGDOC-1.1.3, if approved, is expected to be published on the CNSC website in the fall of 2017, thus making it

available to applicants, licensees and other stakeholders.

If approved, this regulatory document will not become part of the licensing basis but will assist applicants in identifying the appropriate level of information and documents that will be incorporated in the licensing basis.

CNSC staff will also use this regulatory document to assess any applications received before bringing a recommendation to the Commission on licensing.

As mentioned earlier, CNSC staff will continue to issue supplemental guidance in support of individual licence renewals. For example, the supplemental guidance, typically in the form of a letter, would include facility-specific information.

I will now pass the presentation back to Ms Owen-Whitred, Director of the Regulatory Framework Division.

MS OWEN-WHITRED: Karen Owen-Whitred for the record.

To conclude, REGDOC-1.1.3 enhances the existing regulatory framework by clarifying the CNSC's requirements and guidance for nuclear power plants.

It is CNSC staff's opinion that REGDOC-1.1.3 will enhance the regulatory framework by

formalizing and codifying CNSC's expectations related to an application for a licence to operate an NPP; by contributing to greater regulatory certainty for applicants and licensees; and by ensuring transparency for the Canadian public and international community on CNSC's regulatory requirements and guidance.

If approved, this regulatory document is expected to be published in September of 2017.

Based on our conclusions, CNSC staff recommends that the Commission approve this regulatory document.

We thank you for your attention and we remain available to answer any questions that you may have.

THE PRESIDENT: Thank you.

And again, before we go into the questions, I hear that this is done to help industry. So why don't we hear from industry about how helpful this is.

--- Pause

MR. BURTON: Maury Burton for the record. I am the Regulatory Affairs Manager for Bruce Power.

Mr. Saunders had another engagement. Otherwise, he would be here sitting in front of you.

From an industry point of view, the document is actually pretty good and helpful. The major

concern that I have and some of my industry colleagues have is the way that it's structured. The regulations require specific things for an application. This document is structured within the safety and control areas, which don't align with the regulations.

For example, if we look at section 3(f) of the *Class I Regulations*, which is the proposed health and safety policies and procedures for your application, in the guide it's covered in six different safety and control areas. From my point of view, that specific clause is looking at your health and safety program, it should be in one safety and control area rather than covered in six different ones.

Another good example that I will use is in the Class I -- or the General Regs. There is a clause, 3(1)(i), which is the description and results of any test, analysis or calculation performed. That's something that's required. It's mentioned, or the sections in the document, there are eight different sections, but we don't have any real description or guidance on what is expected for this.

So the big concern out of this is when we actually go to do an application, if we only follow the guidance here and cover the safety and control areas, that we could be challenged that we don't meet one of these

particular clauses. As experienced licensees, I am not as concerned about us doing that. It would be somebody that's inexperienced and hasn't gone through this before, that they could miss something very specific that could be challenged legally and possibly, as we have seen before, the NGOs are not afraid to challenge Commission decisions in court nowadays and the concern would be putting a licence in jeopardy. So that is a real concern, is that we don't get specific guidance on specific clauses of the regulation itself.

Other than that, the document is actually quite good.

MR. MANLEY: Robin Manley for the record, Ontario Power Generation Vice President of Nuclear Regulatory Affairs.

Like Mr. Burton, we are generally, you know, pretty happy with the document and appreciate the CNSC's efforts to provide clarity and guidance on how to submit a licence application that covers all the bases. I think those are a couple of good examples that were raised.

From our perspective, we have just recently been going through the process of relicensing our Pickering Station and CNSC staff very helpfully sent a letter very much along the lines of what's in the

Commission Member Document as a sample to help outline the kinds of things that need to be submitted in a licence application to operate a nuclear power plant. So, you know, after years of doing these applications, we think we have a good handle on what we need to submit and to the extent that the guide sets, you know, primarily 'should' expectations with some flexibility in that it's a guideline, I think that's valuable.

And I guess sort of echoing Maury's comment there, we would just, you know, look to make sure that it doesn't inadvertently set any traps for people, in attempting to submit a complete application that nothing be left out. And I don't have any specific examples to add, but generally speaking we are pretty happy with it.

MR. WAYCOTT: Good afternoon. For the record, I am Stephen Waycott, Regulatory Affairs Manager at the Point Lepreau Nuclear Generating Station.

From NB Power's perspective, I would adopt the comments of my colleagues and I have nothing further to add.

THE PRESIDENT: Thank you.

So let's open up our discussion, starting with Dr. Demeter.

MEMBER DEMETER: So this is a change in

process, essentially a different way of providing hopefully the same information you asked for before but in a more codified way, as you say. Has CNSC staff done a dry run in taking an application that has been previously submitted and yourselves realigning that information into this new format to see how easy it's done and maybe use that as an example for industry? You know, you might learn from that exercise as well what they will have to go through to realign how they provide you the information.

MS CAMPBELL: Kim Campbell for the record. So I'm going to pass it over to Brian Gracie to give you some details on how we mapped the way that we did business previously and with the use of the LAG going forward.

MR. GRACIE: Brian Gracie for the record.

It is correct, as already mentioned by the industry representatives, that the draft licence application guide was sent to them or they referred to it for their current licence application, so they had it as a sort of guide to refer to. It was provided in that sense.

But you are talking about sort of a retrospective review of what they did send and an exercise whereby we confirmed if it really would have met our licence application guide or not. I think that's your question.

No, we have not done that as a full exercise. I have looked at a couple of the applications that have recently come in and they take different approaches and the licensee reps indicated to some extent the approaches taken in the applications. They do tend to focus on the regulations as an example and they mention that as well, but in some cases the information is organized according to the safety and control areas and we are able to in all cases use the applications that have been provided either for previous renewals or ones that are about to happen to proceed fully. But no, we haven't done that kind of full assessment of an existing application against the draft guideline yet.

THE PRESIDENT: Mr. Seeley...?

MEMBER SEELEY: Yes, I think it just strikes me that the document is being used for two purposes: the new facilities, which it doesn't feel like there are too many imminent ones coming your way, versus the relicensing, which is a more, you know, brownfield situation where you're going to see these documents every few years. But having one set of requirements for those two different things feels a bit awkward for me in that the new facility would have, you know, significantly more information about a new design and the safety and the

testing and the analysis of that new design, whereas an existing facility you have 30 years of that on the books already.

So, you know, it's just about having the right balance in that and so I just feel that the document needs to recognize that, that if you're doing a relicensing activity there is a lot of information already provided to the regulator, a body of evidence in fact. Much of this is fresh in that you have a number of reports that come on three-year cycles and so you would have them there. I just feel that it's important that that's in the document and maybe even the document identifies new facilities versus relicensing activities, that the relicensing activities should require significantly less work and pointing to existing work that's there.

I think you have some of that language in there but it feels to me like the one-size-fits-all maybe doesn't fit all here. I would like to hear maybe from both sides on this, from the regulator and from an industrial perspective.

MR. MANLEY: Robin Manley for the record.

I think that's an excellent point and if I recall correctly I think that was one of the comments that we made. So when I think of our existing application, and

I was just reading through this guide again today, you know, clearly our application that we are about to submit for Pickering points to a lot of documentation that we have already submitted. For example, there are many Ontario Power Generation documents in our Licence Condition Handbook which CNSC staff already have and so we refer to them. So to the extent that the guide does allow for that pointing to existing documentation, I think that that works okay. And clearly, we would not want to have to submit 100,000 pages every time we go and reapply, right? So I believe that that is sufficiently allowed for in the document would be my perspective.

MS CAMPBELL: Kim Campbell for the record.

So I just want to confirm yes, you know, plants have been around for 30 years, so we do have some expertise on what is needed in these applications for a licence renewal.

However, to give you a little bit more information on the difference for a licence renewal and a new facility, I'm going to pass it over to Dr. Miller to give you some more detail.

MR. MILLER: Doug Miller for the record.

And if we can go to the slide showing the lifecycle, that will help to explain the strategy behind

this document in view of other documents.

First of all, this was intended to be a technology-neutral document. Hence, we did not reference CSA standards directly in the main body of the document. So that way it allows for flexibility for new build and that experienced practitioners know which CSA standards to use. So that was one consideration off the bat.

Secondly is that there are other -- there is another regulatory document that this one was built on and that is REGDOC RD/GD-369, which is a construction licence application guide. It is being rebranded as REGDOC-1.1.2 Version 1. Much of the information, in particular in the design and safety analysis and management system area, has been previously submitted under the construction licence. So there is a follow-through from one document to the next so that while they are constructing the plant, there may be ongoing analysis and experiments, that is, further information to submit. But again, they can submit previously submitted information.

Somebody may also want to just go to an operation licence, which then would include -- since this document builds on the previous ones, you will be adding all of that information. That might be very useful for a second of a kind where you already have the procedures, you

have the design, you know how to build it. So there is actually much flexibility in the licensing process that while this shows a lifecycle, combined licences are possible and it also builds on the previous licensing step. So that is the manner in which we have proceeded to make the document work, because the requirements are quite similar. It's a matter of how much information has been previously submitted.

MR. FRAPPIER: Gerry Frappier for the record.

So just coming to the specifics of your question. So certainly for somebody who is applying and already has an operating plant on the go, we would be expecting them to point to a lot of -- like all the design information we still have to have on the record, but they would be pointing to things that have already been submitted and then from that perspective the package they would be giving us would be considerably smaller.

THE PRESIDENT: Thank you.

Dr. Soliman...?

MEMBER SOLIMAN: Thank you very much.

Thank you for the presentation. The REGDOC-1.1.3 is really a good document, easy to follow and easy also to understand.

I have one question about the aboriginal engagement and since this is only part amended, I would like to know what the engagement requirement and the guidance entail with the Crown duty to consult?

MS CAMPBELL: Kim Campbell for the record. While I get Ms Kim Noble up to the mic, I just want to confirm you are speaking of requirements for aboriginal with licence renewal or a new power plant?

MEMBER SOLIMAN: For both.

MS CAMPBELL: For both, okay.

MEMBER SOLIMAN: Yes.

MS CAMPBELL: Kim Noble...?

MS NOBLE: Good afternoon. My name is Kim Noble, I am Team Leader of the Aboriginal Consultation and Participant Funding Program here at CNSC.

So when we developed REGDOC-3.2.2, Aboriginal Engagement, we set in four requirements. So the first requirement I think is what you are trying to touch on, is that we asked the licensees to determine if the REGDOC applies to them. Therefore, are the activities they propose to conduct going to raise the duty to consult, the Crown's duty to consult? From there, then they would provide us -- if yes, they would provide us a report identifying which indigenous communities that they have

engaged with, any issues that may be raised, depending on the timeline any mitigations that might be proposed, that sort of thing, so that when we start our engagement or consultation process we would have that information.

The Supreme Court of Canada has told us that while we cannot delegate the duty to consult as the Crown, we can use information collected by licensees and proponents of projects to meet our duty to consult. So we worked together. So that's what the goal of REGDOC-3.2.2 is, is that we are going to work together to meet the honour of the Crown.

When it comes to a licence renewal, if there is no change to operation, we would state, like in the Point Lepreau licence renewal, that it does not raise the duty to consult but there is an opportunity in there that where a licensee already has a program in place that they can include that information for us so that we can continue working together, engaging with indigenous peoples through the regulatory review process.

MEMBER SOLIMAN: Thank you.

THE PRESIDENT: Thank you.

Dr. McEwan...?

MEMBER McEWAN: Do you have any response specific to the questions that industry raised at the

beginning with respect to a possible disconnect between the regulation and the REGDOC?

MR. MILLER: Doug Miller for the record.

Yes. This was a comment that was received in the initial comments and it was a subject of discussion in the May 2017 workshop. What we have done is prepared Appendix A, which outlines the regulations, and then did a mapping to each section of the document and then we looked at it the other way by referencing the relevant regulations in each section of the document. So this way we feel that we have sufficiently covered and addressed all the regulations. We had independent verification of that within the CNSC to make sure, is there anything that we missed.

One of the challenges is that there is really no easy way to cut the pie. No matter which way you do it, you're going to end up with some convoluted sections. There is some interesting discussion regarding section 3(f) on health and safety policies. Does it include radiation protection as well as conventional health and safety? That's up for debate, but at least it is covered somewhere through the various safety and control areas.

But the one that makes it very interesting

is 6(h), which essentially is describe the safety and control measures for the protection, health, safety and environment from the operation and decommissioning of the reactor, and in a way that is much of the entire safety case. So in order to address Regulation 6(h) for example, you would need pretty much all the information that we have requested. So the SCAs are a convenient way to organize the information.

There is nothing precluding an applicant from organizing it by regulation and providing a map, and some licensees do that. Others only submit the information by the safety and control area. There is no hands tied in terms of that you must, but it does enable the staff review. So you can argue it both ways and maybe there should be the cross-references made, but we have done our due diligence. Yes?

MR. GRACIE: I would just add, as Dr. Miller has already indicated, that the SCAs are how we do our work here and to back up the regulations we have published many REGDOCs and there are also many CSA standards referenced and those are listed in the appendix of the licence application guide, and those are again organized by the safety and control area. So in terms of how we do our work, when you get down to the real detail,

the real criteria, that is already how we have organized it and that's how we have organized ourselves to do our assessment of the application.

MEMBER McEWAN: So if I'm understanding you, some of the responses could actually be quite brief, it could simply be another reference to another part of the document or to a regulation that -- because it has been covered earlier?

MR. MILLER: Doug Miller for the record.

Correct. Yes, you can cross-reference to the extent that it makes sense.

THE PRESIDENT: I have to tell you, from my perspective, having a letter every time somebody wants an application is unacceptable. So putting this requirement on paper is absolutely the right way of doing it.

So I have a specific question. How you are going to manage this? The application must be coming to you electronically. There is no way you can keep up all those tables and all those requirements and all the standards up to date manually. I have been saying this now for a long time. I hate to give Revenue Canada as an example, but when I do my income tax, I don't care about the revenue legislation, all I care is, okay, Revenue

Canada, how are you going to assess my application? So I am interested in a SCA that will assess my application, but if the SCA has changed and there's a new standard, I want to know on the application what is the current standard, not what it was a year ago, what is it today. So how are you going to manage this? I have seen all the tables, good stuff, but how are you going to keep them up to date? Anybody?

MS CAMPBELL: Kim Campbell for the record. That's a good question.

So it is something with Tables C.1 and C.2 that needs maintenance and from an ongoing maintenance perspective we will be revising that document. I will pass that over to Karen Owen to give you a little bit more detail on how we will tackle this going forward.

MS OWEN-WHITRED: Karen Owen-Whitred for the record.

So recognizing that there is a strong preference for having all of this automated and digital to the extent possible, the tools that we have available to us immediately are, as Ms Campbell has already referenced, the appendices, particularly Tables C.1 and C.2 that provide at the very least a baseline for applicants in terms of what REGDOCs or CSA standards are applicable. We do have the

capability, staff has the capability to keep REGDOCs up to date. We are agile in that respect, we can be flexible, and at the very least all of our regulatory documents are on five-year review cycles. Recognizing that the referenced information in those tables likely can change faster than that, that is something that we can review on a more frequent basis to make sure that this REGDOC is kept up to date.

That being said, as was referenced in the presentation, at the time of any application there is also a communication with the individual licensee or applicant to make sure that very specifically the information that is requested is known to the applicant. So in combination with the REGDOC providing that baseline, being kept up to date as much as possible and then the supplementary information or communication providing any additional updates that are required, we feel that we have covered the bases there.

THE PRESIDENT: But also, is it mandatory for them to provide it electronically nowadays? We haven't got that far yet? You know, we talk about the nuclear, nuclear technology, and we are still manual. I mean that would be embarrassing on many fronts, particularly when you have those thousand pages and we have to try to make sure

that we can actually go through them and make sure that they are au courant with the current, if you like, requirement. I just don't see how we can do this manually. Go ahead.

MR. MILLER: Doug Miller for the record.

I guess we were prescient on page 6 of the application guide:

> "Applicants are strongly encouraged to submit the documents in electronic format."

So we did do that much. There is nothing to say this can't be transmitted into a web-based form.

Another thing I would like to mention is that in view of keeping the documents up to date, and the industry is well aware of this, is that there is much structured discussion about implementation of regulatory documents. So as they are developed and on the road to implementation, we can update the tables in sync with the activities with the licensees to keep them current.

THE PRESIDENT: So which brings me to another point, that if there is a lack of clarity between the Regs and the REGDOC, once you send an email to staff and say fix it, you know, if it's online, and we accept that we can have -- and again, I'm using Revenue Canada as

an example. You get bulletins about amendments all the time. So they can tell you we have amended it because of new standards, new requirements, et cetera. But our documents should be evergreen, continuously up to date rather than going through a process once every five years updating them. Is that doable? What am I missing here?

MR. BURTON: Maury Burton for the record.

That is doable. And from my point of view, what my concern is isn't a showstopper by any means because we can meet -- what Bruce Power has done is we have mapped each of the clauses of the Regs to our management system and other reports that we have, such as the PSR, to demonstrate that we have met that and then we have done a separate report mapping to the safety and control area. So there are ways around that. It's just from my point of view there are some of the clauses that -- and you have read them in the Regulations -- are a little grey, so a little guidance on some of those.

And we do talk with CNSC staff if we do have questions on what their expectations are for those particular I will call grey area clauses in the Regulations where we are not quite sure the depth of information that's required, and sometimes those change over time as well just because of ongoing things, particularly in the environment

area because the Regulations are changing in that area along with expectations. So we continue to add additional information to meet the requirements and expectations of the Regulations.

MR. FRAPPIER: Gerry Frappier for the record. Just to also add a little bit to the conversation.

As was mentioned, in the appendix of the documents we have the lists of applicable REGDOCs and CSA standards, but we don't have the version of them. And so while certainly things change quite a bit, the structure of both CSA documents and our own REGDOCs don't change as much. So when it says the CSA document N288.1, that has been in place for a long time, is going to be in place for a long time, the key thing is what version, so we are going to want -- like now we would be saying give me the 2016 version or something like that. So those will change, but those will be dealt with specifically on an exchange of letters for somebody when they come ready to apply. We will have already had, as Karen mentioned, an exchange of detailed sort of here is the version of the standards we are expecting to be used for your application.

THE PRESIDENT: But if I understood correctly, I think that the moment you know there is a new version of a REGDOC, you should post the new version.

MR. FRAPPIER: Gerry Frappier.

That's right, it's posted. What I'm saying is that the application here would make reference to REGDOC-3.2.2, Aboriginal Engagement, we were just talking about. That could get updated next week, but it will still be called REGDOC-3.2.2, Aboriginal Engagement, probably. You know, so there is a lot less structural changes to the standards in REGDOCs and this is really laying out here is those by name.

THE PRESIDENT: Back to Dr. Demeter.

Mr. Seeley...?

MEMBER SEELEY: Maybe just to come back to the mapping table. You commented about the 14 safety control areas versus the Regs and how they map over. Was that included as an appendix in the document or it's just something you did?

MR. MILLER: Doug Miller for the record.

Is that post-workshop we included it as a new appendix to the document.

MEMBER SEELEY: Great, thank you.

THE PRESIDENT: Mr. Soliman...?

Dr. McEwan...?

Okay, thank you. Thank you very much.

--- Pause

THE PRESIDENT: Okay, we will take a 15-minute break and hope that the next presenters are available to be here at 3:15. We are ahead of schedule, believe it or not, by an hour. Whoa.

--- Upon recessing at 2:58 p.m. /
Suspension à 14 h 58
--- Upon resuming at 3:17 p.m. /
Reprise à 15 h 17

CMD 17-M13/17-M13.A

Presentation from CNSC Staff

THE PRESIDENT: The next item on the agenda is an update on the Public Information Program for Devices containing Radium Luminous Compounds, as outlined in CMDs 17-M13 and M13.A.

I understand that we have somebody joining us via teleconference, Mr. Owen.

MR. OWEN: Yeah, Michael Owen with Canadian Nuclear Laboratories national program in Port Hope, Ontario.

THE PRESIDENT: Thank you.

And I understand CNSC has some

presentation. Mr. Rinker, over to you.

Mike Rinker: Good afternoon, Mr. President and Members of the Commission. My name is Michael Rinker and I am the Director General of the Directorate of Environment and Radiation Protection and Assessment.

With me today is Ms. Caroline Purvis, the Director of the Radiation Protection Division; Ms. Christina Dodkin, a Radiation Protection Specialist; Mr. Peter Fundarek, the Director of the Nuclear Substances and Radiation Devices Licensing Division and other staff who support us on this file.

And as you heard, we have Mr. Michael Owen, a Senior Projects Specialist from Canadian Nuclear Laboratories' Historic Artefact Recovery Program who is joining us by teleconference.

We are here today to provide an update to the Commission on the Public Information program for devices containing radium luminous compounds as detailed in Commission Member Document 17-M13. We will start by providing an overview of radium and its uses in devices in Canada. Then, we will describe the regulation of radium luminous devices under the *Nuclear Safety and Control Act.*

And lastly, we will provide a summary of

the outcomes of the Public Information Program since our last update to the Commission that occurred in February 2012.

On January 1, 2006, the Commission granted an indefinite exemption for devices containing radium luminous compounds from the limitations specified under paragraph 8(b) of the *Nuclear Substances and Radiation Devices Regulations*. Under this exemption, a person may possess or use an unlimited number of radium luminous devices without a licence, provided that a radium luminous compound is the only nuclear substance in the device and the device is not disassembled or tampered with.

As part of its decision, the Commission requested that CNSC staff present periodic reports on any issues related to the licensing exemption, including information with respect to the success of the public information program developed to support the exemption. This is CNSC staff's second report to the Commission in this regard.

I will now turn over the presentation to Ms Dodkin.

MS DODKIN: Good afternoon. My name is Christina Dodkin and I am a Radiation Protection Specialist with the CNSC.

It is my pleasure to be providing the Commission with the second update on the CNSC's Public Information Program for Devices Containing Radium Luminous Compounds.

I will first be providing an overview of the radioactive nuclear substance "radium". Radium is a naturally occurring radioactive element, and it is a decay product of uranium 238. Radium exists in nature mainly as radium-226, although several additional isotopes are present.

Radium was first discovered in 1898 by Marie and Pierre Curie, and pictured on this slide is Marie Curie in her laboratory in 1905.

Being radioactive, radium is unstable and emits energy in the form of radiation through the process of radioactive decay. Radioactive decay is best described using the term half-life, which is the amount of time required for half of a nuclear substance to decay. Radium-226 has an extremely long half-life of 1600 years which means that radium will remain radioactive for many years.

Soon after radium was discovered, it was greatly exploited. For example, radium was once an additive in products such as toothpaste, hair creams, bath

salts and even food items due to its supposed curative powers.

Early on, it was found that mixing radium with a phosphor resulted in a compound that self-luminesces or glows in the dark. This compound was developed into paint and was quickly employed around 1910 to paint military items and timepiece dials, in particular during both the World Wars. In Canada, the use of radium luminous paint was widespread, beginning in the 1930s until the late 1960s.

We refer to a device which contains a radium luminous compound in paint as a "radium luminous device" or an RLD. I will use this term, RLD, throughout the rest of the presentation.

Pictured on this slide is a wristwatch, manufactured in 1936. The hands and numerals had been painted with radium luminous paint, so this wristwatch would be considered an RLD. As mentioned, the use of radium luminous paint for dial painting and screening began in earnest by the First World War. RLDs were typically painted by hand in dial painting facilities. In order to paint fine lines, the young women who were employed as dial painters pointed the brushes in their mouths. Amounts of radium were swallowed each time that a brush was pointed.

As a result of the ingestion of the radium, the dial painters developed medical problems of varying degrees of severity including anemia, degeneration of jaw bones and cancers.

Investigations definitively established radium as the cause of the illnesses.

The first deaths of the dial painters occurred in the mid-1920s, and by 1926 the practice of tipping the brushes by mouth seemed to cease. This tragedy resulted in an awareness of the need for radiation protection controls when handling radium.

The majority of RLDs in Canada are historic artefacts associated with the military, such as aircraft and naval instruments; aircraft instruments being the most common. Aircraft RLDs may be found in operational aircraft and on display in museums. One study estimates that there may be tens of thousands of aircraft RLDs in Canada today. Pictured on this slide is an aircraft instrument with numbers and lettering painted with radium luminous paint.

Because of their age, the majority of RLDs are generally not identified or marked as containing radioactive materials. The phosphor that was mixed with radium deteriorates after several years, causing the RLDs

to no longer glow in the dark. The rate of deterioration of the phosphor increased with increasing radium content, such that radium luminous markings would need to be renewed approximately every two to three years. Only a radiation detection instrument will confirm if a device contains radium luminous compounds.

Being radioactive, radium is unstable and continuously decays, producing other radioactive decay products. Radium and its decay products emit alpha, beta and gamma radiation.

The hazards from exposure to these forms of radiation can occur in two ways; by exposure to internal contamination from radioactive material that has been taken into the body, primarily from alpha and beta radiation, and by external irradiation outside of the body by means of gamma radiation.

There is a risk for intakes of the radium compounds when RLDs are opened or damaged since loose particles of radium luminous paint may be ingested or inhaled by a person. Gamma rays can penetrate the body, so gamma emitters like radium can result in external exposures to persons even when the source is at a distance. Generally the more RLDs that are stored together, the greater the radiation dose rates and the greater the

potential for external radiation exposures, such as what is pictured on this slide.

Under the former *Atomic Energy Control Act*, licensing was not required for RLDs.

In the year 2000, new requirements for RLDs were introduced under *the Nuclear Safety and Control Act* and in the *Nuclear Substances and Radiation Devices Regulations*. It was recognized that the greatest radiological risk from RLDs is when they are opened since this increases the potential for intakes of radium. There was a need to have service activities, which involves opening, disassembling, repairing or removing radium luminous paint from RLDs under regulatory control to ensure the health and safety of workers and the public.

Therefore, licensing requirements for service activities associated with RLDs were introduced to ensure that these activities were being performed by trained persons following safe work procedures.

Controls over disposal of RLDs were also introduced since RLDs are not permitted to enter into regular municipal waste streams. RLDs must be transferred to a CNSC-licensed radioactive waste management facility for disposal.

Licensing requirements were also

introduced for the possession and use of more than 10 intact RLDs, which was based at the time on the average number of RLDs found in a typical aircraft instrument panel. This particular requirement was meant to target situations where many RLDs may be found in one location, such as in an aviation museum or an aircraft repair shop.

Soon after the new requirements came into force, CNSC staff recognized that there was a need to ensure that the regulation of the possession and use of intact RLDs reflected the risk-informed approach of the CNSC. In reviewing the regulatory strategy it was determined that the underlying basis for the decision to use the criteria of 10 RLDs for requiring a licence to possess and use needed further analysis. The number 10, which was based on an average number of RLDs in an aircraft instrument panel, did not necessarily reflect the potential for radiological risks to persons.

For example, the radium luminous paints were manufactured with varying concentrations of radium salts, such that there are extreme variabilities in the amount of radium contained in RLDs. This variability has a direct bearing on the associated radiological risk of a given device and, for that matter, a grouping of 10 or more devices.

In addition, it was evident that many private citizens who had devices with radium luminous compounds would not necessarily be aware and may not meet all requirements under the regulations for holding a licence.

Beginning in 2001 and up to 2005, the Commission granted a temporary exemption to licensing the possession and use of more than 10 RLDs. During this period of the temporary exemption, CNSC staff conducted a radiological risk assessment to determine the radiological risks to persons associated with the simple possession and use of RLDs. The radiological risk assessment took into account information gathered by CNSC staff from studies, site visits, and consultations with stakeholders.

Notably, a study was conducted in 2003 by a consultant with the objective of determining the scope and distribution of RLDs in the public domain in Canada.

With this information, CNSC staff assessed the radiological risks associated with simple possession and use of intact RLDs to determine the likelihood of a person to receive a radiation dose above the regulatory public dose limit of 1 millisievert per year. Stakeholder groups assessed were those with private collections of RLDs, aircraft maintenance crews, commercial and private

aircraft operators, museums; Royal Canadian Legions and flight training schools.

The results of the radiological risk assessment demonstrated that simple possession and use of intact RLDs is a low risk activity. It confirmed that it was unlikely that members of the public would exceed the regulatory public dose limit of 1 millisievert per year from the simple possession and use of intact RLDs, especially if they were provided with guidance on the safe handling and display of their artefacts. The assessment also confirmed that there was a potential for elevated levels of gamma radiation to develop when RLDs are stored or grouped together. The studies revealed that this type of situation typically occurs in commercial aircraft operations and museums.

So CNSC staff assessed these situations in more detail based on the information gathered. In commercial aircraft operations, older aircraft were found to operate with instrument panels containing up to 20 RLDs. The CNSC staff examined conservative estimates of maximum flight hours for flight crews, and the maximum radiation dose rates that were observed in cockpits which revealed that radiation doses to aircraft operators would not exceed the regulatory annual public dose limit of 1 millisievert.

In museums RLDs may be stored or displayed together. The studies revealed that overall there was a good level of radiation safety awareness and safe handling practices in place in museums such as limiting public access to displays and configuring storage areas to limit radiation exposures to persons.

The assessment also confirmed what was already well known: The greatest radiological risks are when RLDs are opened since this increases the potential for intakes of radium. This situation was already addressed through requirements for licensing by the CNSC to ensure that these activities are being conducted by trained and qualified persons who follow proper handling procedures.

On the basis of the radiological risk assessment which was presented in Commission Member Document 05-M73, the Commission granted an indefinite exemption to licensing the possession and use of more than 10 intact RLDs, effective January 1, 2006. This exemption means that a person may possess or use an unlimited number of RLDs without a licence, as long as a radium luminous compound is the only nuclear substance in the device and the device is not disassembled or tampered with.

As part of their decision, the Commission requested that CNSC staff present periodic reports on any

issues related to the licence exemption for RLDs, including with respect to the success of the public information program. So as reported to the Commission during the February 2012 update, CNSC staff have developed and implemented a public information program with an emphasis on general radiation safety awareness, promoting safe handling and proper display of RLDs.

Activities under this program have included the publication of a brochure which is pictured on this slide, which contains radiation safety-related information and advice on safe handling practices for RLDs. The brochure also provides a dedicated CNSC email address that may be used for specific inquiries on RLDs, which is radium@cnsc-ccsn.gc.ca.

I would like to note that an incorrect email address is referenced on page 6 of CNSC staff's CMD 17-M13.

Information regarding RLDs, such as tips for identification of such devices and general safe handling practices have also been published on the CNSC website.

CNSC staff reported to the Commission in 2012 that there were opportunities for improving the public information program for RLDs. CNSC staff had engaged key

stakeholders of the aviation community and museums. However, it was identified that there was a need to develop and implement more effective strategies for engaging members of the public, specifically military artefact collectors. Therefore, an outreach strategy was developed to incorporate activities targeting this group of stakeholders into the existing public information program.

CNSC staff attended a number of military collector shows and published advertisements in select media in order to engage this stakeholder group. Attendees at the military collector shows expressed great interest in CNSC staff's presence at the event, especially the unique CNSC booth which is pictured on this slide which was specifically designed to attract the attention of members of the public and stakeholders.

In general, collectors were aware of the use of radium in artefacts and they were receptive and curious to know more about their collection pieces. There was also no evidence that this community was engaging in unsafe practices with their devices containing radium luminous compounds.

Although modest, public interest has been steady since the launch of the public information program for RLDs. Requests from members of the public regarding

RLDs continue to be received through CNSC channels. Since the last update to the Commission in 2012, CNSC staff have responded to approximately 35 requests for information and assistance from members of the public, timepiece hobbyists, museums, and historical societies, other government agencies, scrap metal recyclers, and aircraft service providers. The majority of persons were seeking advice on how to identify an RLD and how to properly dispose of an RLD.

Dedicated web pages on the CNSC website continue to also be a valuable tool for disseminating information regarding RLDs.

I would now like to provide an update to the Commission on the licence exemption.

Since the licence exemption came into force in 2006, CNSC staff have not been made aware of any situation where there would be a potential for a member of the public to exceed the regulatory public dose limit of 1 millisievert per year due to the simple possession and use of RLDs. CNSC staff's radiological risk assessment, which supports the licence exemption, remains valid.

CNSC staff intend to pursue revisions to the Nuclear Substances and Radiation Devices Regulations as it pertains to simple possession and use of RLDs when the

regulations are reviewed in 2019.

Additional resources available to the public include the Historic Artefacts Recovery Program or the HARP, which is operated by Canadian Nuclear Laboratories' Low Level Radioactive Waste Management Office. Under this program, the CNL provides technical advice to stakeholders and members of the public on the identification and management of radium, including historic RLDs found on public and private properties throughout Canada. CNSC staff have a collaborative relationship with the HARP and routinely disseminate information about the program to members of the public and stakeholders.

This brings us to the end of our update. Experience to date has shown that the licence exemption has not caused risk to the environment, the health and safety of persons, or national security. CNSC staff intend to pursue revisions to the Nuclear Substances and Radiation Devices Regulations as it pertains to the simple possession and use of RLDs when the regulations are reviewed in 2019. The public information program for RLDs has and will continue to meet the objectives of providing the public and stakeholders with assistance in identifying RLDs as well as providing general information on radiation safety awareness and advice on how to safely handle RLDs.

Based on the successful implementation of the public information program, CNSC staff recommend that routine updates to the Commission on the status of the program be discontinued.

Mr. President, Members of the Commission, this concludes our presentation. CNSC staff are available to answer your questions.

THE PRESIDENT: Thank you. So I'd like to start the question period with Mr. Seeley.

MEMBER SEELEY: Thank you for the presentation. Actually I don't have any questions.

THE PRESIDENT: That's very clear, then.

--- Laughter / Rires

THE PRESIDENT: Okay. Dr. Soliman.

MEMBER SOLIMAN: Thank you very much for the presentation. I have one question. On page 13, licence exemption for possession and use of RLD. The second bullet, it says:

> "Allows for possession and use of unlimited number of RLD provided that
> - device only contains radium ...
> - device is not disassembled or tampered with."

How do you control this process? How do

you -- yeah.

MS DODKIN: Christina Dodkin for the record.

So you are correct. So currently there is that exemption for licensing RLDs -- an unlimited number as long as they're intact and not disassembled with.

So how it's controlled is by using our public information program to reach out to the public and the stakeholder groups to make them aware of the requirements in the regulations.

We also did a number of outreach activities prior to the regulations coming into force in 2000 as well, where we identified those high-risk activities which were being conducted mainly by aircraft service providers, because they were disassembling and repairing these devices. So we targeted that group of stakeholders first to either guide them into licensing or guide them to dispose of their devices and cease performing that activity.

So as it stands now, we occasionally do come across a damaged device, but because our public information program is out there and fairly well-known, we do get a lot of questions and there's no fear from the public. They can ask for advice and we can specifically

guide them if they do have a damaged device on how to properly handle it, and then guide them to getting it through the proper channels to be disposed of.

MEMBER SOLIMAN: Okay. So you are not using media in order to promote the principle of not opening these devices. You just attend and distribute brochures and things like that? You don't use the media at large?

MS DODKIN: Christina Dodkin for the record.

So in the past we have used a number of outlets to try to spread the message. For instance, we published in the *Legion* magazine, which has a circulation of 250,000. So that was something that we did. We also, by attending these military collector shows, which were attended between 400 and 500 people, we made a lot of connections there and handed out our brochures.

Shortly after the last update to the Commission, we also provided articles through our Facebook -- the CNSC Facebook page and Twitter as well, and we plan on doing that again to raise awareness.

MEMBER SOLIMAN: Thank you very much.

THE PRESIDENT: So you -- I mean, social media would be ideal, because you are definitely -- since

you don't license them, you don't know what you don't know. So you say you're not allowed to dump it in municipal dump, but how do you know that they don't do it anyhow? Is there a way?

If somebody wanted to dump it into a municipal dump, when they go -- do all municipal dump have one of those radiation detector?

MS DODKIN: Christina Dodkin for the record.

So indeed, all -- or not -- I'm sorry. I'll rephrase that.

Not all landfills and scrap metal yards have a portal or radiation portal monitoring systems that you're referring to. If they do have them installed, typically they can catch these that end up in scrap metal or in municipal waste. And we are getting reports through the CNSC duty officer. We're averaging about one -- one report per year of these showing up in a landfill or a scrap yard.

But that said, not all landfills and scrap yards do have these portal monitoring systems in place. So there is a potential that they may be showing up; however, based on our interaction with the collectors, there is some value to them in these items and they're -- they like to

hang on to them. They're in collections; they're of historical significance. So they're typically not something that you would throw away.

THE PRESIDENT: Thank you. Dr. McEwan.

MEMBER McEWAN: Thank you. So what is the dose rate at the surface of one of the aircraft dials?

MS DODKIN: Christina Dodkin for the record.

So I have the numbers. They're somewhere in here. But I can give you a general idea. So but first you have to remember it's -- each radium luminous device is different in that it depends on the size and how much radium was mixed in the paint, of course.

So we've seen a few microsieverts, up to 400 microsieverts an hour on contact with these. So some of the larger military or naval compasses that are quite large can contain a significant amount of radium, whereas if you have like a timepiece or a wristwatch, they tend to contain less than licensable quantities. So you're not getting much of a dose rate as well.

Okay. So timepieces we're seeing roughly 2 microsieverts per hour versus the bigger military items, which we've seen up to 400 microsieverts an hour.

MEMBER McEWAN: That's a really

interesting figure. I -- so I guess the corollary of that is how many watches are floating around? I mean I remember 200 years ago, growing up, I remember --

--- Laughter / Rires

MEMBER McEWAN: Yeah.

MEMBER SEELEY: Better check the one you got on.

MEMBER McEWAN: How many of the things --

THE PRESIDENT: That might explain some things.

--- Laughter / Rires

MS DODKIN: Christina Dodkin for the record.

Well, so I don't have an actual number in Canada. But something interesting in these studies that we've conducted, it was found that during the 1950s and '60s, a radium luminous painted clock or a watch could probably be found in most Canadian households. And I know in the US they estimated 100 million, uh-huh, that were manufactured over this period.

There was also the smaller commodity items, like there were drawer pulls, chain pulls for lights, things like that. So it was very widespread and some of these are very collectable. Some of the watches

not so much, but the one that was pictured in our slide is actually quite valuable and in great condition.

THE PRESIDENT: Dr. Demeter.

MEMBER DEMETER: Thank you for that fascinating talk. This is a topic near and dear to my heart, because I've done a bit of research on the radium dial painters and how they actually changed labour law and social justice issues with their plight in the US. So it's ...

The one question I had is if an individual decides to discard their item and then they contact you and they figure out where to send it, what's a ballpark cost to the consumer or to the person for safe disposal?

MS DODKIN: Christina Dodkin for the record.

So I mentioned in my presentation, and we have Michael Owen on the line from Canadian Nuclear Laboratories. So there is a Historic Artefact Recovery Program. And that is available to the public to properly transfer and dispose of their devices. And that is done at no cost. And perhaps Michael Owen may want to add a few words to that effect.

THE PRESIDENT: Go ahead Mr. Owen.

MR. OWEN: Yeah, Michael Owen here.

As Christina mentions, there is no cost to the requester as long as we can confirm that the artefact is in fact orphaned. And so the assessment and classification and the transport to long-term storage at a licensed facility, there is no cost to the requester.

MEMBER DEMETER: Thank you very much.

THE PRESIDENT: So do you get a lot of direct call to CNL?

MR. OWEN: Michael Owen.

Our calls come from individuals, collectors, enthusiasts, from regional landfills, from commercial enterprises, scrap recyclers. They also come directly from the CNSC officers who've been contacted by individuals. And they also come -- inquiries also come through our website.

So we address each one, gather as much information as we can in hopes of finding out whether they qualify for the artefact program. If they don't, if we can discern that, then we'll pass those individuals on to other agencies that may be able to assist them, such as CNL's commercial waste stream. And for those that we believe do qualify, we then go out and confirm that, assess it, pick it up, and move it to temporary storage.

THE PRESIDENT: So over the years is it a

big volume? I'm trying to get a feel as to what's the volume that you collected to date, and is that volume earmarked to the Near Surface Disposal Facility?

MR. OWEN: Well, not at this time, the Near Surface Facility. In the past, it's -- articles would go directly to our licensed storage facility at Chalk River. Currently, they go to our consultant's licensed storage facility in Stittsville, Ontario, until a number of them can be built up to make for a more efficient process and transport.

So I would say typically we receive between four in an active year up to 10 requests. And again, they can come from government agencies, the CNSC themselves, or individuals. And a request might be a single artefact, but a request might also be multiple artefacts within that request. We've had some a number of years ago where we picked up, transported to our facility in Chalk River two pallets of 45-gallon drums from an airport facility. So it can vary. And there's an ebb and flow to the requests year over year.

THE PRESIDENT: Thank you.

Back to Mr. Seeley. No? Dr. Soliman? Dr. McEwan? Dr. Demeter?

So I have one last question. I understand

there are two CNSC licensed corporation that actually does repairs. I mean is -- there's business in this? I'm just curious to know if there's really a viable business in repairing some of this stuff. Or did they do other things? Who are they?

MS DODKIN: Christina Dodkin for the record.

So that's correct, there are two licenses currently issued to two companies that have processes for -- well, the one actually removes radium luminous compounds from devices. The other is a service provider that receives instruments including RLDs for repair only.

As far as the amount of work they're getting, I know that the one -- their major equipment comes from the Department of National Defence. The other one, I think they're not as busy. They don't get many -- it's become very infrequent to remove -- to be asked to remove RLDs -- or I'm sorry -- radium luminous paint from RLDs.

And I know that we have Peter Fundarek sitting here. He's the director of the Nuclear Substances and Radiation Devices Licensing Division. So perhaps he may want to add a few words.

MR. FUNDAREK: Peter Fundarek for the record.

So the two licensees that we have, one in Halifax is IMP Group Limited and in Mississauga it's Wright Instruments Limited. So those are the two companies that are licensed for repair of radium luminous dials.

THE PRESIDENT: Do they actually inspect them? I'm trying to understand the risk of this particular -- why are they licensed if that's -- did they have the volume to warrant a licence? Because they open up and dismantle it. So when you inspect them they actually need all those precautions to deal with this?

MR. FUNDAREK: Peter Fundarek for the record.

Yes, IMP Group Limited has been a licensee since December of 1992, and they were last inspected in October of 2014, and there were only a few minor items of non-compliance. And Wright Instruments Limited was a licensee since 1994 and was last inspected in 2015 -- May of 2015. And again just a couple of minor items of non-compliance.

But both of those licensees maintain their programs. And there are costs associated with the licences that are issued to those licensees. So there must be a business case that they can make to continue to do this type of operation.

THE PRESIDENT: Okay.

MR. OWEN: Michael Owen.

Just to comment on Wright Industries. I happened to speak to the owner this morning of Wright Industries. He mentioned to me that he's moving his business to a new location. He's 84 years old and he intends to continue in the business. So that's anecdotal. And he has some upwards of 500 devices in his inventory, some of which he wants to use the HARP to dispose of.

THE PRESIDENT: Thank you. It's fascinating.

Anything else you want to talk about? Okay, thank you. Thank you very much.

CMD 17-M38

Submission from CNSC staff

THE PRESIDENT: The next item on the agenda is an Event Initial Report regarding a release of untreated water at Port Hope Project Long Term Waste Management Facility, as outlined in CMD 17-M38. And I understand that we have some people online. We have CNL here and we have a representative from Ontario Ministry of the Environment and Climate Change. And let's see if

technology work. So who do we have online here?

MS REDMOND: For the record, you have Courtney Redmond, district supervisor with the Ministry of the Environment and Climate Change, Peterborough District Office.

THE PRESIDENT: Anybody else?

Okay, thank you. So Ms. Tadros, I understand you're going to make the presentation. Over to you.

MS TADROS: Thank you, sir, and good afternoon Mr. President and Members of the Commission. My name is Haidy Tadros. I am the director general of the Directorate of Nuclear Cycle and Facilities Regulation.

With me today are my colleagues, Ms Kavita Murthy, director of the Nuclear Processing Facilities Division; Mr. Robert Buhr, senior project officer of the same division. We are also joined by Mr. John Thelen behind me, acting director of the Health Sciences and Environmental Compliance Division; and Mr. Henry Zhang, environmental program officer of the same division.

We are here to answer any questions Commissioners may have on this Event Initial Report concerning a release of untreated water at the Port Hope Project Long Term Waste Management Facility that occurred

on June 23rd, 2017.

The details of the event, CNSC staff action, and the licensee's actions are detailed in the Event Initial Report CMD 17-M38.

Staff from the CNSC, the Ontario Ministry of the Environment and Climate Change, as well as Environment Canada and Climate Change all coordinated their efforts when the event took place and in subsequent weeks leading to the CNSC inspector issuing an order to Canadian Nuclear Laboratories.

By way of an update, as stipulated in the order, Canadian Nuclear Laboratories has provided the required information on August 11th, 2017. CNSC staff are in the process of assessing the information submitted and will continue our compliance oversight to ensure Canadian Nuclear Laboratories meets the conditions of the order.

Staff are available to take any questions at this time.

THE PRESIDENT: Thank you. So why don't we jump right into the question, unless CNL wants to say anything.

Okay, Dr. McEwan.

MEMBER McEWAN: Thank you, Mr. President.

Thank you for the map, helpful and it also

really helps, sort of gives the geography from the visit that we made a little earlier.

So, I guess in terms of the mistake around the valve, how easy is that to make and detect and how long do you think before it was detected, and whatever it was, 20 minutes to stopping prior to detection, that it could have been occurring?

MS TADROS: So, Haidy Tadros for the record.

We understand your question, sir. With regards to the valve, I believe you are referring to the event that took place at Port Granby?

MEMBER McEWAN: Yes.

MS TADROS: That's the human error and the status update that was provided to the Commission.

While the Port Granby incident did not produce an event initial report, we felt that the two events happened on the same date and that is why we provided the status update, and we certainly can take your questions, but just for point of clarification, we are discussing the Port Granby event by way of this status update.

MR. LEBLANC: So, in this regard there's a number of -- we only have one EIR here on the record that

is pertaining to the Port Hope facility, but then it is proposed, since we have all the important players around this and we have received documentation, we will then proceed with a discussion of the Port Granby release of untreated water.

That will be followed also by discussion with CNL about the CRL Class IV power loss and small bush fire, and then we'll be able to talk also about an incident at Cameco McArthur River today, and we'll finish with a discussion on the radioactive material at the North Bay landfill.

So, we'll tackle each of those five items separately.

And yes, if we can continue with the Port Hope water release. Thank you.

THE PRESIDENT: So, first we are in the Port Hope, the file reads Port Granby.

MEMBER McEWAN: Okay. So, in that case I'm good.

THE PRESIDENT: Okay. So, sticking with Port Hope -- and by the way, thank you also for the photos; I like the photos.

So, questions? Let me see the list here. So, Dr. Demeter?

MEMBER DEMETER: I'm getting disoriented here. Okay.

I'll just defer until I get --

THE PRESIDENT: Okay.

Mr. Seeley?

MEMBER SEELEY: Perhaps just a brief synopsis of the event and your findings, whether there was a root cause or an initial event analysis?

MS TADROS: So, Haidy Tadros for the record.

I'll start off with regards to CNSC staff actions on the event and I invite CNL to provide the details of the event itself and the actions that CNL has taken.

So, as detailed in our EIR, on June 23rd the duty officer, CNSC duty officer was notified of a release of untreated water from the Port Hope site and basically that flags a whole series of events afterwards that CNSC staff followed up with.

First, to respond on the site was the Ministry of Ontario Environment and Climate Change, so we do have them available to address any questions the Commission may have.

Based on the event occurrences and CNSC

staff later following up with an inspection on the Monday, the event happened on the Saturday, it was determined that CNL needed to respond to the untreated overflow of water that had occurred from the different treatment ponds and collection ponds that were in place.

And subsequently to that, again, another CNSC inspection to follow up on those actions provided the opportunity for the CNSC inspector, it was Mr. Robert Buhr at the time, to issue CNL an order of immediate health and safety to take further actions to ensure emergency measures were in place.

So with that, maybe I'll turn the mic over to CNL for their accounts of their actions on that event.

MR. KEHLER: Good afternoon, Mr. President, Commissioners. Thank you for being here with us today.

My name is Kurt Kehler, I'm Vice-President Decommissioning and Waste Management with Canadian Nuclear Laboratories.

With me is Craig Hebert, he is the General Manager of the Hazardous Waste Program which includes both the Port Hope initiative and the low level radioactive waste management office.

Just to have an opening remark, we take

this event quite seriously. Any release of materials in environment is unacceptable to us and we just want to make that clear in your minds, that we're taking all actions necessary to prevent this in the future and we should have prevented it from happening that day.

So, let's talk a little bit about the details of the actual event, and for that I'll turn it over to Mr. Hebert.

MR. HEBERT: Craig Hebert for the record.

First again, I want to reiterate what Mr. Kehler had indicated, we do take this matter very seriously, we were at the time of the event, before the event and following the event and to confirm, there were no threats nor impacts to health and safety of workers or the public related to these events, both at Port Hope and Port Granby.

Some other relevant information. The overflow was the result of the extremely heavy rains that occurred, record precipitation in the area on June 23rd, more than 60 mm of rain fell in a very short period of time.

That was much more rain than was in the forecast and what was predicted and reports of flooding throughout Northumberland County and that area were front

page news that day.

In addition to the severe rainfall that day, the Port Hope and Durham area had been experiencing record precipitation since April according to Environment Canada's records and, despite this record precipitation, we'd been effectively managing the increased amount of water at our PHAI project sites for several months leading up to the event and plans were already in place to enhance those measures in order to manage the water and our efforts before, during and after the event significantly mitigated the degree to which that overflow did occur.

It was legacy treatment ponds that overflowed. They're part of the old waste water collection and treatment system at Port Hope constructed in the 1970s.

As part of the remediation and the Port Hope area initiative improvements, we are undertaking a number of significant improvements to site infrastructure in preparation for the delivery and storage of low level radioactive waste to the long-term waste management facility and those improvements include the decommissioning and removal of the legacy ponds that were the subject of the overflow, and that was always part of the Port Hope project plan.

New ponds will be constructed as part of

the project that will more than double the current storage capacity of water on the site, and along with other improvements that are being implemented to address long-standing environmental issues related to this site that will improve the environmental integrity of the waste that has been there since the 1950s.

Immediately following the June 23rd events, we initiated a thorough review of all of our water management and related plans and procedures for PHAI remediation and construction to prevent a reoccurrence. This review was initiated before the Commission issued the order related to the event on July 7th.

And we now have, as Ms Tadros indicated, we submitted the enhanced revised CNL water management and contingency plans for the Port Hope site to staff and we will also be submitting revised plans similarly for the Port Granby project, even though not required by the order.

So, again, I would like to take this opportunity to ensure there was no threat to health or the environment as a result of these events. We take it very seriously and would certainly invite each of you, the Commissioners, to visit us in Port Hope and take a tour of our site at your convenience, we'd be happy to host you again.

Thank you.

THE PRESIDENT: Thank you. So, Dr. Soliman?

MEMBER SOLIMAN: Thank you. I would like to ask a question about what lesson learned from this release of untreated water and what recommendation we put in place in order to avoid this from happening again?

MR. HEBERT: Craig Hebert for the record.

In terms of lessons learned, particularly over the months leading up to this event is, the weather forecasts these days aren't as reliable as we would expect and would have thought. The forecast rainfall amount prior to that day was 10 to 15 mm; we received in the 60 to 70 neighbourhood.

We have, as a result of the event and the onset of severe weather prior to it, increased the availability of supplies and equipment maintained on site for use in contingencies, things like pumps and sandbags and extra hoses and those sorts of things in order to manage water on the site.

As I mentioned earlier, we had been doing that for months leading up to that event and, as a result, realized we needed to re-double those efforts and increase those inventories and we have done that.

MEMBER SOLIMAN: Thank you.

MR. KEHLER: I would like to add -- Kurt Kehler for the record -- add to Craig's comments.

The specific cause of the overflow at this site was a construction culvert which carried the water to the east collection pond; that culvert was overwhelmed by the silt and the volume of water that built up at the culvert which caused surface water then to re-flow across to the ponds adjacent to that.

And so part of the course to correction is to review and revise our site water management plans, increase the size of our water carrying capabilities and to address the silt-laden water in more appropriate measures.

MEMBER SOLIMON: Thank you.

THE PRESIDENT: You know, some of us have been around for a long time on this Port Hope, and the reason it started is because the overflow into the lake from the old kind of waste facilities that was to be fixed.

But I recall vividly that, I think we were discussing a Doomsday scenario, that you assured us that you had enough pumping and back-up to deal with any rain flow.

So, are you saying that this -- that really this was beyond design event on rain?

MR. HEBERT: Craig Hebert for the record.

And we did have sufficient pumping capacity on site. Referring to the figures in the EIR, the storage facilities known as the collection ponds are the ones that are intended to contain and retain significant storm flows.

They did do that, they did not overflow; it was the legacy treatment ponds that are designed as -- they were, again, designed and constructed back in the 70s as part of the old waste water treatment system. Addition of chemical flocculants and sedimentation was the treatment technology of the day, and it was one of those ponds, as Mr. Kehler indicated, received an unintentional large amount of water due to the overwhelming of an upstream culvert.

So stormwater arrived in those treatment ponds in an unintended manner, and it was that treatment pond that overflowed.

Those treatment ponds are designed as in a cascading fashion, one overflows to the other. So they're normally full to begin with, they aren't intended to be stormwater containment points and obviously did not function as a stormwater containment pond hence the overflow. So it was an inadvertent overload of something

that wasn't intended to manage stormwater.

The facilities that were intended to manage stormwater did do that.

THE PRESIDENT: Okay, thank you. Dr. Demeter.

MEMBER DEMETER: Thank you very much. At page 7 of the report, the EIR, the last sentence is:

> "The off-site samples from W01 and W02 show slightly elevated results to what is normally observed, however the sample results confirm that the evidence had no adverse environmental effect." (As Read)

Are these results for chemical or radiological constituents? What are the results measuring?

MS TADROS: Haidy Tadros, for the record.

So, as per the EIR, these samples were collected both by CNL Staff as well as CNSC Staff, and I'll ask Mr. John Thelen to provide the details of what exactly the chemical nature or the radiological nature of those samples were.

MR. THELEN: Good afternoon, John Thelen, for the record, Acting Director of CNSC's Health Sciences and Environmental Compliance Division. Yes, both

radionuclide and non-radionuclide hazardous substances were analyzed for, that includes radium 226 as well as arsenic and uranium.

As mentioned, CNSC Staff independently sampled in those locations both on June 27th and July 20th, and over that sampling period results did return to background conditions for that area and results were within ranges known to be safe for protection of the environment.

MEMBER DEMETER: Thank you.

THE PRESIDENT: Just a follow-up. When you say the sample, did you sample of the lake water right beside where -- did anything go into the lake as a result of this overflow?

MR. THELEN: John Thelen, for the record.

The ditch in question connects through water bodies, through Clark's Ditch, through Brand Creek, out to Lake Ontario. So both CNSC and CNL independently sampled that water body reaching out to Lake Ontario.

CNSC was not able to sample Lake Ontario. Actually, it was yesterday that Mr. Henry Zhang, Environmental Program Officer at CNSC was actually in Port Hope, was able to get into a boat and sample in Lake Ontario. Sampling in that area was prohibited because of the high water that we have had in that area. But again,

the water pathway I just mentioned, all those samples were taken where you would see decreasing trends back to background before reaching Lake Ontario.

THE PRESIDENT: Thank you.

I'd like to hear from the Ministry of Environment and Climate Change of Ontario. What's your assessment of this event?

MS REDMOND: Courtney Redmond, for the record.

The Ministry is -- we're generally satisfied with the actions that were taken in response to the spill event. We also do concur with CNSC's assessment that no adverse environmental impacts resulted from the spill incident.

THE PRESIDENT: So are we expecting kind of a root cause report on top of that, and when would that be available?

MS TADROS: Haidy Tadros, for the record.

As mentioned in my opening remarks, sir, we are currently going through the material that's been submitted by CNL to ensure it meets the conditions of the order by way of our regulatory oversight reports, and I believe we've also indicated that in our EIR.

We are coming before you as a regular

update on the Port Hope Area Initiative and more information will be provided at that time based on the review of the material provided and CNSC Staff's oversight activities as the work progresses.

THE PRESIDENT: Okay, thank you. I think we are now all lined up to do Port Granby, so over to you.

MS TADROS: Haidy Tadros, for the record.

I will take my cue to Dr. McEwan's question with regards to the valve. Perhaps just a brief summary with regards to Port Granby, as mentioned. Due to the heavy rainfall in the area there was a similar situation at the Port Granby site whereby water, again, poured out of the location it was supposed to be in.

That event was determined to be because of human error. Certain valves need to be operated at certain times; opening one and closing the other, and based on an investigation that CNL had conducted it was determined that the operator had opened and closed the wrong valves in sequence.

So perhaps CNL can provide some details as to the valve.

MR. HEBERT: Craig Hebert, for the record.

That is essentially correct. The overflow is estimated to have lasted for about 20 minutes, a

relatively small volume. As indicated in Staff's update, it was estimated 2 to 5 cubic metres of water overflowed. To put that in perspective, that's about two to three hot tub volumes, so relatively small given the amount of stormwater that was retained and effectively managed on the site.

The valving in question was the valving to direct water out of the east gorge collection area that was, at the time, pumping directly to the waste water treatment plant, it was in full operation at the time in order to maximize the processing of that excess water. During the storm event when the capacity of the treatment plant was in danger of being exceeded, water was diverted to the equalization pond, and it was the changing over of those valves that caused a very short-term reduction in pumping capacity resulting in the overflow.

MEMBER McEWAN: So you're confident that 20 minutes was in fact the time that the overflow was occurring, that there wasn't a significant period before that that it could have been occurring, presumably because you can time the valve change?

MR. HEBERT: Craig Hebert, for the record.

We're relatively confident in that estimate. It wasn't sort of stopwatch measured, as it were, it was based on observations by staff that were there,

contractor staff that were there at the time responding to the severe storm event and attempting to mitigate any overflows.

THE PRESIDENT: Anybody else, comment? Mr. Seeley, comment?

MR. SEELEY: Perhaps then to lessons learned from the event, and how to mitigate in the future?

MR. HEBERT: Craig Hebert, for the record.

Similarly, to my earlier comments with respect to reliance on weather reports and increases in contingency plans and supplies and equipment, in addition at Port Granby, that area of the site was an active construction area, unlike at the Port Hope site where, again, it was the legacy treatment plant -- or, sorry, treatment ponds that were the subject of the overflow.

So there are some lessons learned with respect to our interface with our staff and our contractor staff and the coordination communication between the folks on the pumps, as it were, and the folks in the treatment plant. So we've implemented more robust communication procedures in that regard as well.

THE PRESIDENT: Okay. What worries me is on page 3 of 3 of the Staff document. The last sentence of the first paragraph:

> "The investigation also identified that there are no operating procedures in place for non-routine conditions in the event of excessive rainfall." (As Read)

Again, you know, one of the questions we always ask, plan for the worst, hope for the best. So we've seen this facility. We toured Port Granby, big huge facility. I cannot believe there wasn't a doomsday scenario built in. What do you say to that?

MR. KEHLER: Kurt Kehler, for the record.

Those procedures are being updated to address this specific situation. It is a short-term situation because the whole Port Granby, that area where this overflow occurred, is in line for remediation, and the pump being in the situation there is temporary, but it should have been taken into account as part of the operating procedures.

THE PRESIDENT: Staff, do you want to comment?

MS TADROS: Yes, thank you, sir. Haidy Tadros, for the record.

As CNL has pointed out, there will be procedures that are being put in place. Coming back to the

previous question on lessons learned, and as a regulator we do take the opportunity to learn lessons for ourselves out of these events.

I think one of the things that the team has noted is that our focus, especially as the work is ramping up in the Port Hope and Port Granby areas, will be on emergency exercises related to environmental releases. We did conduct an emergency exercise in the Port Granby area, but it was more geared to worker safety. As the remediation work is happening, it was not focused on environmental upset conditions and conditions for excessive rainfall, for example.

So our lessons learned is we'll provide a bit more oversight in that area as the work in Port Hope Area Initiative progress.

THE PRESIDENT: Thank you. So the next item, I'm told, is CNL is going to brief us on Class 4 power loss and small fire. Thank you.

MS TADROS: Haidy Tadros, for the record.

Maybe by way of sort of introducing this and to allow Mr. Cotnam a little bit of time to set himself up there. Again, as Mr. Leblanc had indicated, CNSC Staff had provided the status update to the Commission again because of a duty officer report, and noting that the

Commission Members would be in the area of Chalk River to give you a feel for sort of the layout and what had happened.

I am joined by my colleague, Mr. Jean Leclair, whom you've met I'm sure. So we're here to answer any questions with regards to this loss of Class 4 power at the Chalk River site which coincidentally also caused a little bush fire to happen as well.

THE PRESIDENT: So who's going to give us a brief?

MR. LECLAIR: Mr. President, Members of the Commission, my name's Jean Leclair, I'm the Director of the Nuclear Laboratories Research Reactors Division.

So just to supplement what Ms Tadros has just said. So just so happens this week we had Dr. Demeter, Dr. Soliman, and Mr. Seeley on an orientation tour of the Chalk River property. While we were there we had the opportunity to visit the location of the proposed near-surface disposal facility, which is a project that's undergoing environmental assessment at this point in time. So while we were there CNL pointed out the actual location of this bush fire.

So just to summarize the event, Class 4 power -- just for everyone's benefit, Class 4 power is the

main power that comes to the site, it's the power that's provided by Hydro One, which would be the same power that we receive to power our homes. So in this particular situation the loss of the Class 4 power occurred on the Chalk River site and that loss of that power also led to the loss of power in the Village of Petawawa, so there were residential customers that were also affected. That's what led to the potential for public interest.

As is normally done by CNL when a loss of Class 4 power happens it triggers a need for them to bring in their back-up power, which it did. The site then proceeded to initiate their emergency operations centre in case there were any issues, which there weren't. However, with doing that, they notified provincial agencies, Ontario Province Police and Deep River Police. So as a result of that it obviously indicates a potential for public interest.

So there's no EIR, it's not really an event. Class 4 power failures do occur, they do happen on occasion. But because of the public interest, the potential for public interest, CNL posted it on their website, CNSC Staff posted it on our website with a link to the CNL website to ensure that the information is out there so that there's some reassurances that it's not CNL that caused the

Petawawa Community to lose power and, in fact, it was a Hydro One event.

Just to note the bush fire, so a long way from the site, it was a small fire and was immediately put out. So the site was never at risk, safety was never compromised, there were no impacts on health safety and environment.

THE PRESIDENT: I just thought if you staged it for this team that came to visit the site to see how well you can manage it, no? Okay, questions?

MEMBER SEELEY: What was the cause of power and how did that link to the forest fire?

MR. LECLAIR: Jean Leclair, for the record.

Perhaps I'll ask Mr. Cotnam, seeing that he's here, I'm sure that he can answer the question and provide you that information.

MR. COTNAM: Yes. Good afternoon, Commissioners. I haven't seen you in a couple hours. To your point, Dr. Binder, I wish we were that slick and organized that we could predict and use those events the way you said, in the tour.

To directly answer the question, it was a downed Hydro One line and that's what actually initiated

the event. We have been working with Hydro One over many years. The Commissioners who've seen the regulatory oversight report know that we've actually made quite great strides in improving our Class 4 infrastructure. But, as Mr. Leclair said, and I do agree, it knocked out the power in actually both Deep River and Petawawa, so therefore it was -- you know, it was a known public event, it was a Sunday afternoon. I'm pleased to say that all the emergency ops response was just as you would have expected, including the proactive notification when you activate the emergency ops centre, the EOC as we call it.

We continue to work with Hydro One to improve the infrastructure and support they give to the Chalk River site.

THE PRESIDENT: Question? Dr. McEwan?

MEMBER McEWAN: How quickly can you move to your emergency power? Is it instant or is there a gap?

MR. COTNAM: We have several different back-ups. Of course, NRU is the most significant and it is instantaneous. In fact, the Commission is well aware in the past that we have both sized and re-qualified diesel generators, we have regular backup generators, and we also have -- post-Fukushima, we have some Fukushima diesel generators for the site. Then there's a series of Class 3

diesel generators again that support other site infrastructure.

So it's a fast event. Mr. Leclair is correct, we do lose Class 4 power in the valley not on an infrequent basis, and so the focus back in 2013 has always been on improving that infrastructure, particularly starting with NRU, which we have achieved.

Maybe I should add that NRU was in a safe shutdown. It happened to be in its outage, its regular outage when this occurred, but nonetheless I personally shared the all clear that was sent by our staff at the EOC at approximately 1900 that Sunday evening, I sent it over to actually Mr. Leclair because I knew the duty officer had of course been contacted. That essentially said that all nuclear facilities were in a safe state, we were standing down the emergency op centre, that was done as well.

THE PRESIDENT: Thank you. Questions?

MEMBER SOLIMAN: I have a question, but I think you answered partially my question. I understand that Class 4 power operates some pumps on the reactor to remove the heat from the core. When you have Class 4 power loss, there is a certain period of time where you will run the generator to create equivalent power, which we call on the power plants Class 3 power.

So in this case, between these two there is a loss of equipment -- did any of the equipment experience failure?

MR. COTNAM: No. Again, with NRU, we have made quite a bit of robust improvements over the years with its safety systems, including with what's called the IIP, the Integrated Implementation Plan, which was a 10-year plan as a basis of the ISR in 2011 relicensing, which was to take us out potentially 10 years, that will not occur now. So all the electrical equipment has been upgraded.

Maybe I should add, I didn't get into this, but of course there's Class 1 battery banks as well and there's multiple Class 1 battery banks which have been modernized because of course the original banks would not be appropriate now.

MEMBER SOLIMAN: Thank you.

THE PRESIDENT: Anything else on this? Okay, thank you.

I understand we're now going to hear from Cameco about a particular incident that occurred. Who wants to brief us on this? Go ahead.

MS TADROS: Thank you, sir, yes. That would be me as well. It's been an exciting time in the fuel cycle area.

So I do believe there are Cameco staff who have signed in and are available to provide additional information to this matter. I know the Commission Members do not have any written briefing on this and the timing of such didn't allow for us to put together a written briefing, so I just wanted to prepare a verbal briefing for today's proceedings and to notify the Commission of a recent incident that took place underground at one of our operating mines, the McArthur River Uranium Mine in Northern Saskatchewan.

The event occurred on the morning of August 12th where a worker accidentally lost the distal phalanx of the fifth digit of his left hand, so basically the tip of the little finger from where the bone was, while installing piping underground.

So the worker was in the process of helping feed the piping through this piping installation machine from a crouched position. As he came to stand up and steady himself he placed his hand on the chain drive of the machine and, inadvertently of course, the machine caught his little finger and sort of amputated it at the bone.

The work was immediately stopped and the piping machine was out of commission. Cameco is looking

into the machine and the functioning of the machine as part of their investigation report. But more importantly, the injured individual was brought to the surface, received medical attention right away. Only on the Monday, on a regular schedule, he was flown back to Saskatoon and was attended to in hospital. The worker is currently on modified work duties until further notice.

So just to say that although the event is not reportable under Saskatchewan's Occupational Health and Safety Regulations, the Saskatchewan Ministry of Labour Relations and Workplace Safety was notified by Cameco, and Cameco has posted the summary of the event on their website, and so have we.

Under Section 29 of the CNSC's *General Nuclear Safety and Control Regulations*, CNSC Staff have deemed this event to be reportable, so we are expecting a 21-day report from Cameco identifying all of the details of this event, where the machine will be looked at and seeing if it was functioning properly at that time.

We will review the report once we receive it and should there be any follow-up that needs to happen, any corrective actions, we will do so as part of our compliance inspections. We will follow-up also with the Commission if there is any significant findings to this

event, either by way of a status update, as you've seen us do on other events, or through the regulatory oversight report if the event is not deemed to be as significant.

So Cameco, again, is available to add anything further and if you have any questions.

THE PRESIDENT: Thank you. Cameco, do you want to add anything to this?

MR. MOONEY: Liam Mooney, for the record.

Thanks. I think Ms Tadros covered it very well. I think I would add that in relation to that particular work this was an experienced employee who had been working with that piece of equipment and doing this task for a number of years. There was a safety card for the work and for the individual respectively that had been put in place.

As outlined by CNSC Staff, we will be providing additional details, the results of our investigation, and the implementation of corrective actions to CNSC Staff in accordance with the requirements of the *General Nuclear Safety Regulations*, Section 29.

THE PRESIDENT: Thank you. Questions? Dr. McEwan?

MEMBER McEWAN: I'm just surprised that it's not reportable under Health and Safety Regulations,

that you lose a bit of a digit. I'm surprised.

MS TADROS: Haidy Tadros for the record. Perhaps Mr. Liam Mooney may add to this.

Again, this was our preliminary information from Cameco at the time, so that's why I believe we need to look into this a little further and find out sort of all of the legislative rules around this, have they been reported accurately.

MR. MOONEY: It's Liam Mooney for the record.

In our Occupational Health and Safety Regs and one specific to Mines Regulations there is a very prescriptive list around what leads to a reportable event as a dangerous occurrence, and in that conversation, this event, having regard to the fact that the employee returned to work the following Sunday and went out on his normally scheduled flight and was seen by a physician without any time required in a hospital, it doesn't trigger the reporting threshold. That's not to say that Labour Relations Workplace Safety isn't interested in the event and they have asked for some further information that was provided to them as well as to CNSC staff.

THE PRESIDENT: Thank you.

Questions?

Okay, thank you. Thank you very much.

Status Update on

Discovery of Radioactive Material in North Bay

THE PRESIDENT: We have one more item which is a status update on the discovery of reactive material at a landfill site in North Bay.

--- Pause

THE PRESIDENT: Mr. Fundarek, go ahead.

MR. FUNDAREK: Good afternoon, Mr. President and Members of the Commission. My name is Peter Fundarek and I am the Acting Director General for the Directorate of Nuclear Substances Regulation.

With me today are Sylvain Faille, Director of Transport Licensing and Strategic Support Division; François Dagenais, a Transport Officer in the Transport Licensing and Strategic Support Division; and Mr. Simon Martel, an Inspector with the Eastern Regional Office in the Operations and Inspection Division, and he should be joining us by teleconference.

Is he online? Simon, are you there?

MR. MARTEL: Simon Martel, I'm here.

MR. FUNDAREK: Okay.

So CNSC staff have provided a status update to the Commission regarding an incident at a North Bay landfill that occurred in July 14, 2017. We have provided the information that we have to date on this matter and we are available to answer any questions that the Commission may have.

THE PRESIDENT: Okay, thank you.

Why don't we start. Who wants to go first? Dr. Demeter...?

MEMBER DEMETER: Thank you. Based on the talk we just had on radium, it says in your conclusions that:

> "The source of the radiation is either an article containing radium or naturally occurring radioactive material. Due to the low risk associated with this material, these materials are not subject to CNSC regulatory oversight." [As read]

I thought we heard before that disposal of these items is still under CNSC regulatory oversight and that you should not dispose of them in this manner. So possession has been relaxed, but disposal or opening or repair still requires regulatory oversight. So I was

confused with that.

MR. FUNDAREK: Peter Fundarek for the record.

It is correct that the radium luminous devices should not enter into the municipal waste streams. However, we are not sure what this is, this material. It could be just naturally occurring material or it could be a radium luminous device or something else. All we do know at this point in time is that it does contain radium-226, but it may not be a radium luminous device.

THE PRESIDENT: Okay, I can't -- this is one that is really -- you send two inspectors over there, you measure this thing, you saw it's microscopic in terms of its radiation and you didn't get into the bin, pick it out and determine what it is? Why not?

MR. FUNDAREK: Peter Fundarek for the record.

The normal procedure for such events like this is to have the landfill operator contract someone to come and do that work. CNSC staff are not set up to enter into bins to try and access the material because of other hazards that may be existing in the bin, and conventional occupational health and safety --

THE PRESIDENT: What other hazard? You

just measure the thing, it's almost below background, you just said it may be NORM, you send two inspectors over there and you are wasting everybody's time. I cannot believe that we have a procedure that we send an inspector over there and we don't find what the device or piece of junk is.

MR. FUNDAREK: Peter Fundarek for the record.

The concern is that there may be other additional material in there, sharp material or other materials that could cause harm to the inspectors. They are not set up at that time to go in.

THE PRESIDENT: What, are you blind? I mean the thing is open. I saw the thing. You can look inside. You already measured there is no radiation, so what is the fear here?

MR. FUNDAREK: Peter Fundarek for the record.

If I can direct you to Figure 4 you will note that the inspector is at the base of the unit of the bin, and if you look at the picture in Figure 7 you can see that the material is located -- is piled up to the top of that bin. So it would require somebody to actually enter into the bin and sort through the material to try and find

it, and that could pose a health and safety hazard to the inspector, who wasn't prepared to undertake that at the time.

THE PRESIDENT: Well, again, I think that staff should review the *modus operandi* when we send somebody to do all this, particularly after spending too long to make a decision whether to send somebody over there and then sending somebody over there and not doing the job. I think it requires some serious rethinking about your function in sending an inspector to a particular place like that. Anyhow, enough of my rant. Who else wants to ask any questions?

MEMBER McEWAN: You have asked my question.

THE PRESIDENT: Anybody? I thought there were a couple of other ones.

You are suggesting that you are going to have a lessons learned that's going to go back to the Director General. I beg to differ. This time I want to see the lessons learned and the recommendations. I would like it to go to either to EC or MC for discussion of exactly what I have just said.

And the other thing I want to know is, given that this is such a low reading, why does the portal

at the waste facility get triggered by such low-level radiation?

MR. FAILLE: Sylvain Faille for the record.

Actually, for many of the radiation portable monitors, especially at metal recycling facilities and at facilities where they are melting steel, they are setting the portal at the minimum requirements because they don't want to see any radioactive material entering their facility. It's more for protecting their own processes as opposed to anything else and their policy is usually to refuse anything that triggers their portal monitor, irrespective of the amount that is found in the portal.

THE PRESIDENT: But this will even capture NORM material? It doesn't make sense. What are they going to do if they get NORM material? What are they going to do, they are going to send -- they are going to get somebody to come in and dispose of it?

MR. FAILLE: Sylvain Faille for the record.

That is typically what can happen depending on where it's going. For NORM material there are facilities that are especially dedicated for the material, where it could be sent for disposal. It really depends on

the province and the requirements of each of the provinces. And the CNSC doesn't regulate that area, but that doesn't say that we are not aware of what's happening and we are trying to provide some guidance to landfill operators and metal recycling facilities on how to treat every single alarm. But at the same time, since it is not regulated by the CNSC per se, we don't have necessarily a say on if they can accept or not. It's really their own procedures and processes.

THE PRESIDENT: But we do have a limit for -- what is the correct terminology, that it can be disposed of? Somebody help me on this.

MR. FAILLE: There's conditional release limits.

THE PRESIDENT: Conditional release.

MR. FAILLE: Yes.

THE PRESIDENT: There is a parameter. Why don't we tell them, anything below conditional release, don't bother, on the portal.

MR. FAILLE: We set those limits as you mentioned, but it's up to each of the operators to decide if they want to accept those or not. But we certainly informed that we have our limits and when it's below those limits we don't really have any issues with the fact that

it could enter any of the facilities, but it is really up to them to decide if they are willing to take it or not.

THE PRESIDENT: Yes. But the problem is that it causes undue public angst, press. You saw all the wrong measurement, people got excited, so we do have a stake in this. I don't know what we can do about this, but we sure should be aggressive in promoting the idea of don't set it below release limit.

MR. FAILLE: Sylvain Faille for the record.

We understand. We have been trying to find ways of making that publicly available and we are going to look at that also probably as part of our lessons learned, how we can better do that in the future.

MEMBER DEMETER: I was intrigued by the sequence of events. The initial exposure rate that was reported to the Duty Officer was 7 Sv per hour. Noting that the LD 50/60 for humans is between 4 and 6 Sv, that's extremely high, you know, and when I saw that initially I thought of other incidents such as cobalt units that had been put into scrap metal and there are industrial accidents that can achieve this. But have we done an analysis to figure out how they got that number because it went down to, you know, 1.3 µSv I think was the maximum.

So how did we go from 7 Sv to 1.3 µSv? That might help instruct lessons learned for whoever measured the 7 Sv.

MR. FAILLE: It's Sylvain Faille for the record.

Actually, as part of our review of the sequence of events and by going back with the inspectors going to the landfill site, also going back to the metal recycling facility and also talking to the fire department, it's unclear as to where that information came from as the metal recycler, they never provided any measurements to the driver who drove back to the landfill site. So it was kind of an error. We don't know where it came from initially and that's something that we couldn't figure out, how the 7 Sv came about in this particular case. But that is something that we are looking at as part of our lessons learned. We want to find ways of -- find other ways or a better way of confirming those values because, as you mentioned, those are very severe, like it was extremely high dose rates and there were some concerns about that and at the same time something that typically you see is much lower, so we were not sure there was a unit error in the transcription. But like I said, based on our review a little bit further down, we don't even know where that 7 Sv came about based on discussions with people that were

involved.

THE PRESIDENT: But I have to tell you, if we ever in CNSC hear about 7 Sv, you don't need permission, you get into a car and you go and investigate. Us, not some contractor, not some local thing. 7 Sv, it's CNSC that should go in there and investigate immediately just in case they are right. And this again I hope that it will be described in the lesson that you don't spend a lot of time thinking about it when you hear a measurement of 7 Sv.

MEMBER DEMETER: That was the second part of my question, was that the -- it's probably not in the summary report, but the discussion between CNSC and the local fire department, I would hope there was a lot of precautionary such that if you are at a certain boundary and you get a reading you just stop and you isolate that area, if in fact it was 7 Sv and, you know, we need -- it would be a very different response if it was 7 Sv per hour and the local fire department, I'm not sure what their qualifications or their training or certification is to deal with that level of potential exposure. Sending the local people out to measure it if it was initially 7 Sv, I suspect or I hope there was a strong risk communication discussion before sending them out.

MR. SIGOUIN: Luc Sigouin for the record,

Director of Emergency Management Programs.

I will give you some information from the standpoint that the Duty Officer program is one of the programs that our team administers.

So when the Duty Officer did in fact take that call, the caller had reported to them that they had a reading of 700 rads and they didn't quite know what they were talking about, and obviously 700 rads in SIs is 7 Sv per hour. So that was immediately recognized as potentially being a dangerous situation but with a possibility that there was some misunderstanding about the units.

The first thing that the Duty Officer did was contact the Director of the Operations Inspection Division and they discussed the situation and immediately recognized that there were no licensees in that area that would have any nuclear substances or devices in their possession that could lead to that, and a decision was made to see if the local first responders could support an investigation, an immediate investigation. The Duty Officer was in contact with the fire platoon chief and they did discuss the risks of that. They were aware of radiation risks. They had radiation instrumentation but it just happened that their gamma dose meter was out of

calibration. They didn't want to use it. So they were coached, they were aware of the risk, they were coached on the risks. And the Duty Officer in fact was able to make contact with a local licensee, with the local hospital, and the Radiation Safety Officer from the hospital was able to provide instrumentation to allow them to safely evaluate the situation.

MEMBER DEMETER: Thank you very much.

THE PRESIDENT: But, you see, there are two dimensions to this: (a) whether there is a safety issue, and second, all of a sudden it was spinning in the press that there was some radioactive material circulating around and nobody knew what to do. And also, I think somebody told them to put it away in a secluded place and put some parameters. So there is a visible fear factor that gets into the community. That's where CNSC has their role not only to ensure safety but calm the public.

Do you remember what happened in Fort McMurray where all of a sudden people got worried about some old burial material, radioactive material? We sent officers over there and the problem went away, it completely calmed down. That's the kind of thing that I think should be our function. That is my lesson learned from this.

Dr. McEwan, you had another question? No? Okay, thank you.

--- Pause

THE PRESIDENT: This concludes the public meeting of the Commission. Thank you for your participation.

--- Whereupon the meeting concluded at 4:54 p.m. /

La réunion se termine à 16 h 54