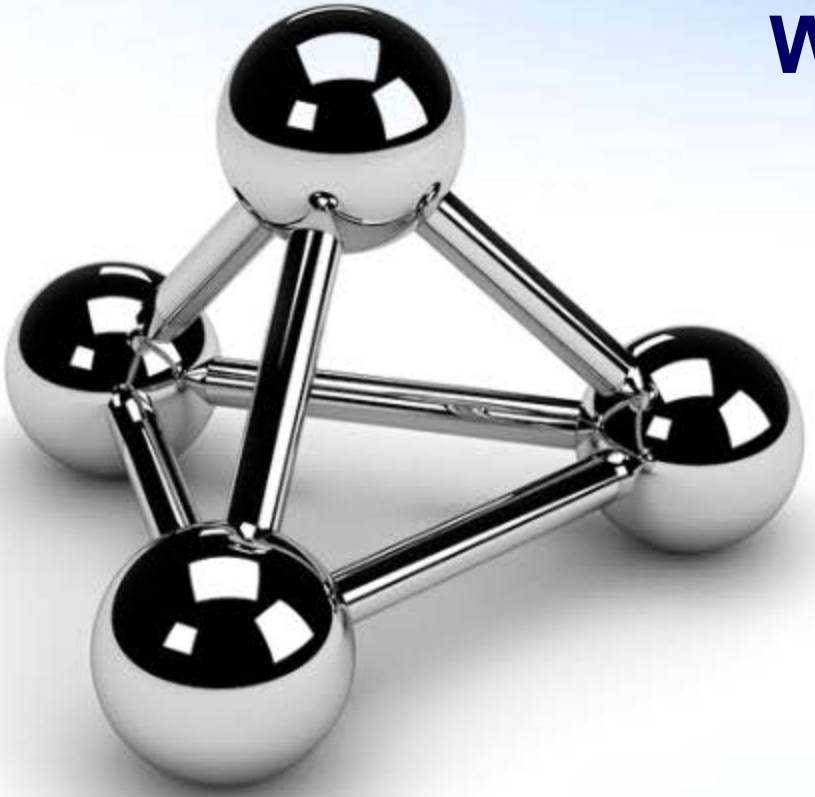
Canadian Nuclear Safety Commission
Commission canadienne de sûreté nucléaire



Workshop on Proposed Amendments to the *Nuclear Security Regulations*

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Focus of Today's Workshop

- Licensees of high-security sites
  - Bruce Power: Bruce A and B Nuclear Generating Station
  - NB Power: Point Lepreau Generating Station
  - Ontario Power Generation (OPG): Darlington and Pickering nuclear generating stations
  - Hydro-Quebec: Gentilly-2

- Licensees who process, use and store Category I and II nuclear material
  - e.g., Canadian Nuclear Laboratories (CNL) – Chalk River

- Licensees and stakeholders who transport or arrange for the transport of nuclear material
  - e.g., CNL, OPG

Today's Goals

- Provide an overview of several proposed amendments that CNSC staff are considering making to the *Nuclear Security Regulations* (NSR), and to receive preliminary feedback from stakeholders

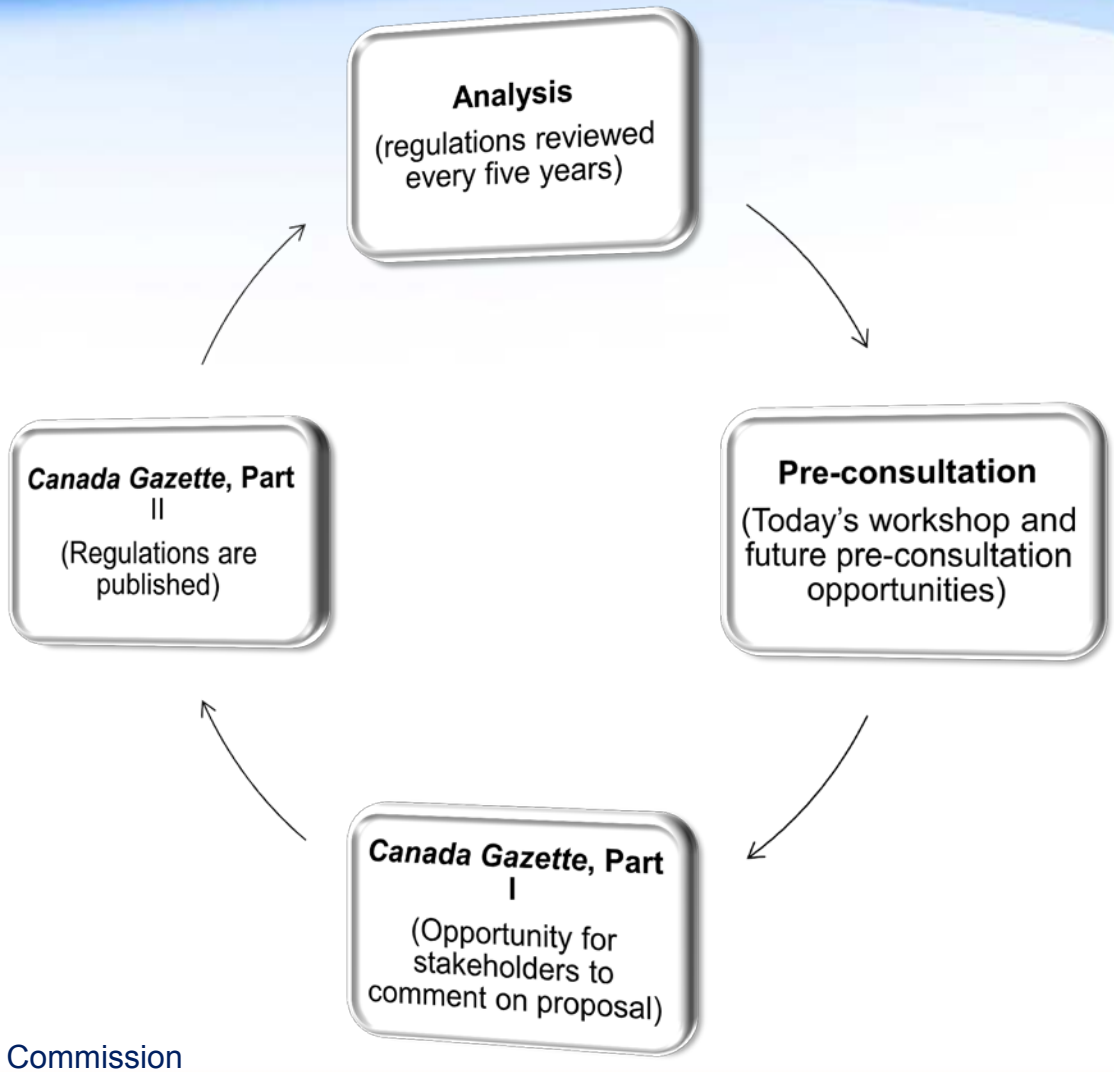
- Provide an opportunity for stakeholders to suggest additional areas for potential amendments to the NSR

Please note that this is a CNSC staff assessment for prompting early discussion

Objectives of Amendments

- Ensure that the regulations continue to fulfill their role in effectively addressing Canada's nuclear security
- Ensure that Canada continues to fulfill its international obligations in regards to the security of nuclear and radioactive materials

Overview of the Regulatory Amendment Process



Context: Changes Since Last Amendments

- Last major amendments to *Nuclear Security Regulations* published in 2006
- Operational experience
  - opportunity to amend regulations based on industry and CNSC operational experience gained in the past `0years
- Evolving security environment
  - security threats continue to emerge, change, and evolve (e.g., cyber, insider)
- Technology advancements
  - NSR should allow new security technology to be implemented in a timely manner by licensees when appropriate (e.g., digital fingerprints, body scanners)

Context: Changes Since Last Amendments (cont'd)

- New international recommendations, guidance, and best practices
  - amendment to the *Convention on the Physical Protection of Nuclear Material*
  - publication of new International Atomic Energy Agency (IAEA) Nuclear Security Series recommendations
  - potential lessons learned and recommendations/suggestions from recent International Physical Protection Advisory Service mission report

Overview of Proposed Changes and Amendments

1. Simplified layout of the NSR
2. Performance-based approach to the NSR
3. Cyber security program
4. Protection of nuclear security information
5. Nuclear security plan
6. Nuclear security culture
7. Effective interface – safeguards, safety and security
8. Nuclear material accountancy and control

Overview of Proposed Changes and Amendments (Cont'd)

9. Protection of workers and visitors
10. Controlled area definition – legal authority of nuclear security officers
11. Security monitoring room
12. Personnel Security Standard reference update
13. Transportation of nuclear material
14. Update to nuclear security officer duties
15. Update to definition for potential adversary
16. Suggestions for amendments, updates, etc.

1. Simplified Layout of the NSR

- **Proposed amendment**
  - propose to lay out the NSR in modular format
    - e.g., for high-security sites, all requirements that apply to these types of facilities will be listed concurrently
- **Why is this under consideration?**
  - current layout makes it challenging to find out what regulatory requirements apply to what facility
    - e.g., requirements that apply to Category III nuclear material are found in both Parts 1 and 2
- **Potential impacts**
  - no anticipated cost impacts
  - improved clarity

2. Performance-Based Approach to the NSR

- **Proposed amendment**
  - considering a performance-based approach where it makes sense to do so
  - regulations to set high-level security requirements
  - technical requirements and guidance to be moved to regulatory documents
  - examples
    - S.9 Barrier Enclosing Protected Area
    - S.10 Unobstructed Area Surrounding Protected Area
    - S.11 Protected Area Intrusion Detection
- **Why is this under consideration?**
  - provides flexibility for licence holders or applicants to propose an acceptable approach to meeting requirements
- **Potential impact**
  - no anticipated cost impact

3. Cyber Security Program

- **Proposed amendment**
  - establish a cyber security program to protect nuclear security, safety, safeguards and emergency preparedness systems against cyber attacks
  - consider cyber threats as part of the design-basis threat analysis and site-specific threat and risk assessment conducted by licensees
- **Why is this under consideration?**
  - cyber security is one of the fastest growing threats to critical infrastructure in Canada
  - IAEA recommendation
  - Nuclear Security Series No. 20 – section 3.12 (h)
  - Nuclear Security Series No. 13, section 4.10
  - 2015 International Physical Protection Advisory Service Mission Report
- **Potential impact**
  - medium impact, but noted that a number of high-security site licensees are already in the process of establishing cyber security programs

4. Protection of Nuclear Security Information

- **Proposed amendment**
  - appropriately protect critical and/or sensitive nuclear security information by setting out high-level requirements for the protection and classification of information, the unauthorized disclosure of which could compromise or place at risk the security of nuclear material and/or facilities at high-security sites
  - include cyber media for the processing, storing and transmitting of nuclear security information

4. Protection of Nuclear Security Information (Cont'd)

- **Why is this under consideration?**
  - without requirements, there is considerable risk and a likelihood that nuclear security information will be disclosed to unauthorized parties
  - licensees use a mix of terms, labels and approaches to protecting information
  - assist in implementing consistent protection approaches within the nuclear industry
  - protection of sensitive, prescribed, and classified information to protect national security
  - to meet international fundamentals (NSS 20)
- **Potential impact**
  - depends on the licensee as some have already implemented programs to protect nuclear security information

5. Nuclear Security Plan

- **Proposed amendment**
  - all security-related information required by the current NSR that is listed or described in several locations such as the site plan, security equipment, systems and procedures, barriers, protected areas, on and offsite response forces be located in one section of the NSR
  - G-274 would be amended to provide updated guidance
  - further, this information will be consolidated into one document by licensees, which will be called a nuclear security plan

5. Nuclear Security Plan (Cont'd)

- **Why is this under consideration?**
  - reflect IAEA recommendations for nuclear security
  - mix of terms used now including security report, site security report, site security plan, etc.
  - simplify the layout of the regulations and update/clarify security related information that has to be submitted by either applicants or nuclear operators

- **Potential impact**
  - minimal, no increase in cost vs. what is currently done

6. Nuclear Security Culture

- **Proposed amendment**
  - licensees of high-security sites would be required to implement a nuclear security culture program
  - establish and implement a nuclear security culture program

- **Why is this under consideration?**
  - the IAEA has identified the need for licensees, regulators, and states to establish an effective nuclear security culture with the goal of providing greater assurance that nuclear security activities will maintain and improve the following: preventing, detecting, delaying and responding to theft, sabotage, unauthorized access, illegal transfer, or other malicious acts involving radioactive material in use, storage, or transport

6. Nuclear Security Culture (Cont'd)

- **Why is this under consideration? (cont'd)**
  - Fundamental principle F, "Security culture" – Amended *Convention on the Physical Protection of Nuclear Material*
  - IAEA definition: Nuclear security culture – The assembly of characteristics, attitudes and behaviors of individuals, organizations and institutions which serves as means to support, enhance and sustain nuclear security

- **Potential impact**
  - requires further discussion to assess impact on licensees, likely limited impact as this can be accomplished through a "corporate culture" that embraces security and safety culture in one program or as a stand-alone program that is equivalent to the safety culture program

7. Effective Interfaces – Safeguards, Safety and Security

- **Proposed amendment**
  - effective interfaces between safeguards, safety and nuclear security systems, staff and operations
- **Why is this under consideration?**
  - IAEA recommendations
    - Nuclear Security Series No. 13, section 4.11
    - Nuclear Security Series No. 20, section 3.12(a)
    - 2015 International Physical Protection Advisory Service mission report
- **Potential impact**
  - minimal, as licensees already have such interfaces in place

8. Nuclear Material Accountancy and Control

- **Proposed amendment**
  - accountability for nuclear materials
  - prompt reporting of any discrepancy in material accounting to site security (security and safeguard interface)
  - protect nuclear material accountancy and control (safeguard) systems from cyber attack as previously referenced in slide # 11
- **Why is this under consideration?**
  - IAEA recommendations
    - Nuclear Security Series No. 13, sections 3.26 and 4.10
- **Potential impact**
  - no anticipated cost impacts

9. Protection of Workers and Visitors

- **Proposed amendment**
  - establish and maintain effective intervention and response plans and procedures to protect workers/visitors

- **Why is this under consideration?**
  - insider threat (e.g., lone wolf), workplace violence, active shooter phenomenon have all contributed to this area having to be addressed

- **Potential impact**
  - medium impact, but noted that a number of high-security site licensees are already in the process of establishing or have established security programs in this topical area

10. Controlled Area Definition – Legal Authority of Nuclear Security Officers

- **Proposed amendment**
  - define what a controlled area is and set up legal authority for nuclear security officers (NSOs) within the controlled area
- **Why is this under consideration?**
  - to ensure that the licensee has the legal authority to implement the appropriate nuclear security measures within the controlled area
  - licensees have requested clearly defined authorities within the controlled area
  - evolving threat
  - defence in depth
- **Potential impact**
  - minimal, as existing high-security licensees have implemented various security measures within controlled areas

11. Security Monitoring Room

- **Proposed amendment**
  - provide a definition for a security monitoring room
  - provide higher-level security requirements that a security monitoring room must meet
- **Why is this under consideration?**
  - current security monitoring room requirements require updating as well as clarification
  - many of the prescriptive technical requirements can be moved to a regulatory document and updated as or when required
  - assist new licence applicants in understanding the critical role that the security monitoring room provides for the nuclear security system
- **Potential impact**
  - ,inimal, as existing high-security licensees have acceptable security monitoring rooms in place

12. Personnel Security Standard Reference Update

- **Proposed amendment**
  - update Personnel Security Standard reference to current document
- **Why is this under consideration?**
  - current government security policy references must be updated
  - seeking licensee feedback on the preferred way to accommodate these changes
  - e.g., provide for a transition clause within the amended NSR
  - changes to security screening in the areas of digital fingerprinting and the expansion of credit checks is required in the most recent personnel security standard, and are being phased in over the next two years
- **Potential impact**
  - direct financial and operational impact on licensees

13. Transportation of Nuclear Material

- Section 5 of the NSR provides the high-level requirements for a transportation security plan
  - Regulatory guide G-208, *Transportation Security Plans for Category I, II or III Nuclear Material*, also provides detailed guidance for licensees
- No amendments are currently being considered to section 5
  - the CNSC's view is that section 5 provides the necessary requirements given the current threat environment
  - depending on stakeholder feedback, current plan is only to update the content of G-208 in consultation with licensees and the public
- As part of this workshop, we would request licensee feedback on how they feel this section is working

14. Update to Nuclear Security Officer Duties

- **Proposed amendment**
  - update NSO duties (reference section 30 – NSR) for both armed and unarmed officers to reflect current duties

- **Why is this under consideration?**
  - this section requires updating and clarification
  - current NSR are focused on protected area and make no mention of NSO duties in other owner-controlled areas

- **Potential impact**
  - none, as NSOs are carrying out the required duties to meet current regulatory requirements

15. Update to Definition of Potential Adversary

- **Proposed amendment**
  - update definition of potential adversary to include current threat factors to the Canadian nuclear industry

- **Why is this under consideration?**
  - to ensure licensees as well as the public understand the broad range of threat characteristics that must be considered when implementing nuclear security measures at high-security sites

- **Potential impact**
  - to be confirmed depending on the results of the design-basis threat analysis

16. Suggestions for Additional Amendments, Updates

- Do you have any additional suggestions for potential amendments or improvements to the *Nuclear Security Regulations,* including how they could be structured?

Group Work Sessions

- Now that we have provided some of our proposed amendments for the NSR, we would appreciate your feedback on them
- At your table please discuss your feedback
- CNSC staff at your table will guide conversations at your table and will record feedback on the laptop provided
  - this feedback will be posted on the CNSC's website
  - prescribed information may be discussed during the course of the workshop and will be handled in accordance with regulatory requirements
- Designate one person at the table to present a summary of the feedback from your table to the workshop

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