



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

Canada

# IMPLEMENTATION OF REGDOC-2.12.3 *SECURITY OF NUCLEAR SUBSTANCES: SEALED SOURCES* for category 3-5 licensees

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**Canadian Radiation Protection Association**  
**Annual Conference**  
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**CANADA 150**

# OUTLINE

- Background of REGDOC-2.12.3 *Security of Nuclear Substances: Sealed Sources* implementation
- Update on National Threat Level and security incidents
- Expectations for category 3-5 licensees
- Current challenges and activities
- Discussion and feedback



# Update on National Threat Level and security incidents



## Medium

A violent act of terrorism

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could occur

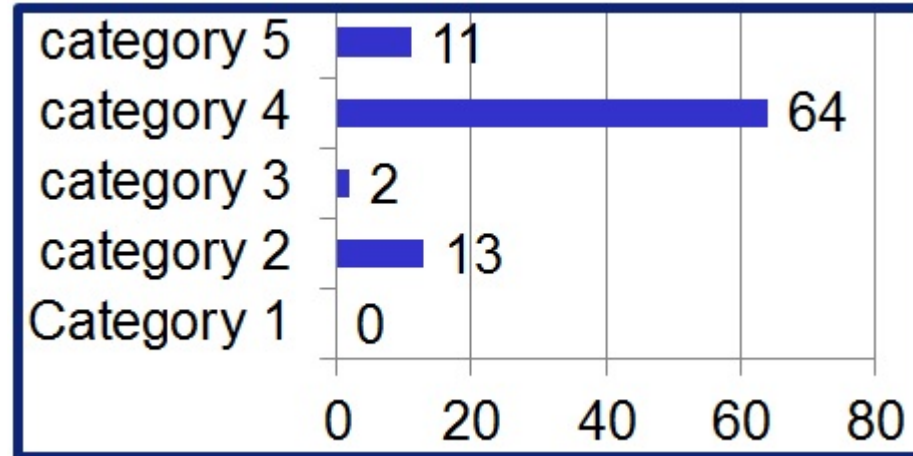
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Additional measures are in place to keep Canadians safe.

Canada's National Terrorism Threat Levels represent the likelihood of a violent act of terrorism occurring in Canada, based on information and intelligence

# Update on National Threat Level and Security Incidents (cont'd)

## Thefts of Canadian radioactive sources



Number of thefts reported to the CNSC from 1991-2016 per IAEA categories

### Status of reported theft

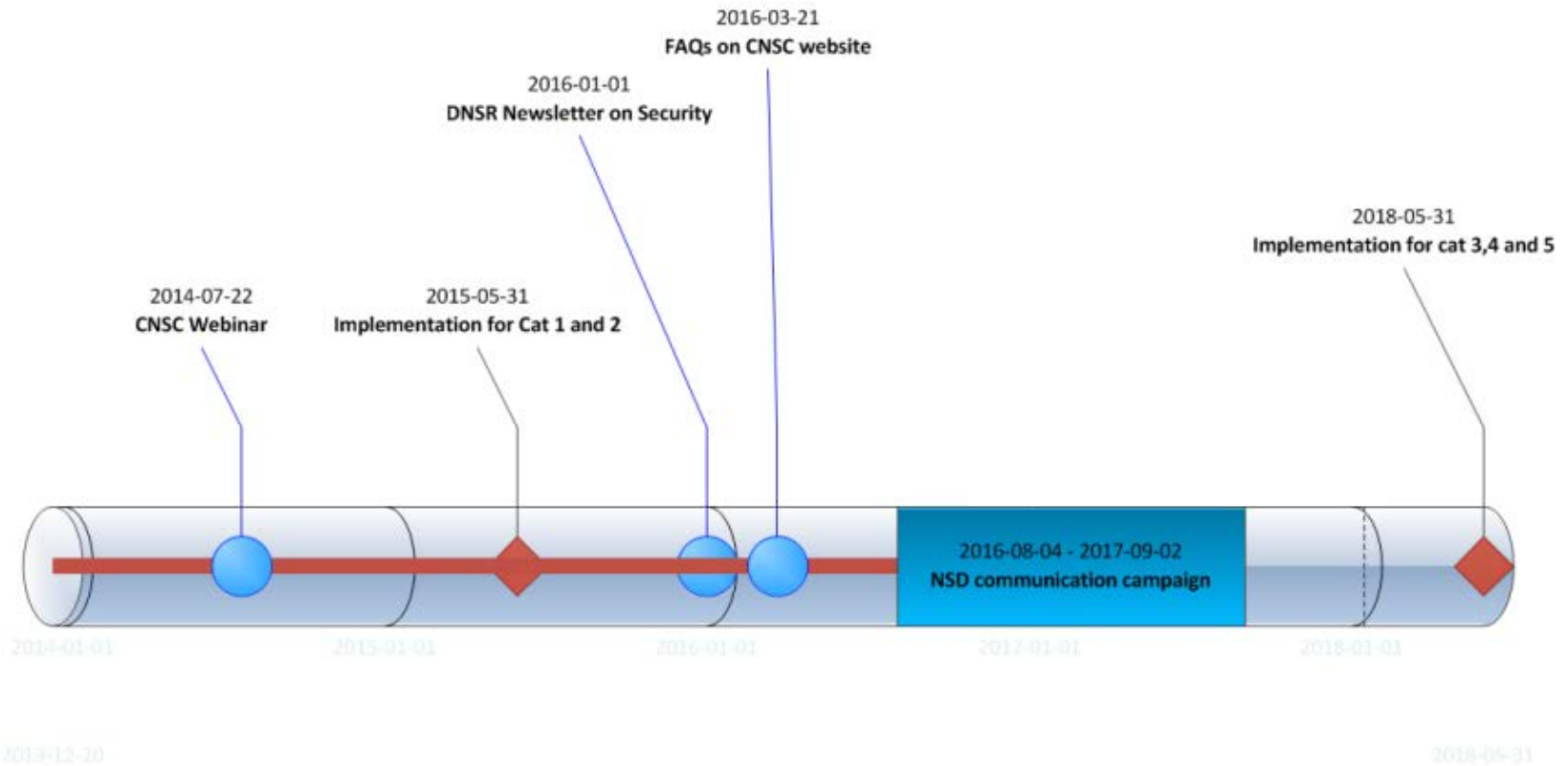
recovered	35
not recovered	41
unknown*	14

### Sectors

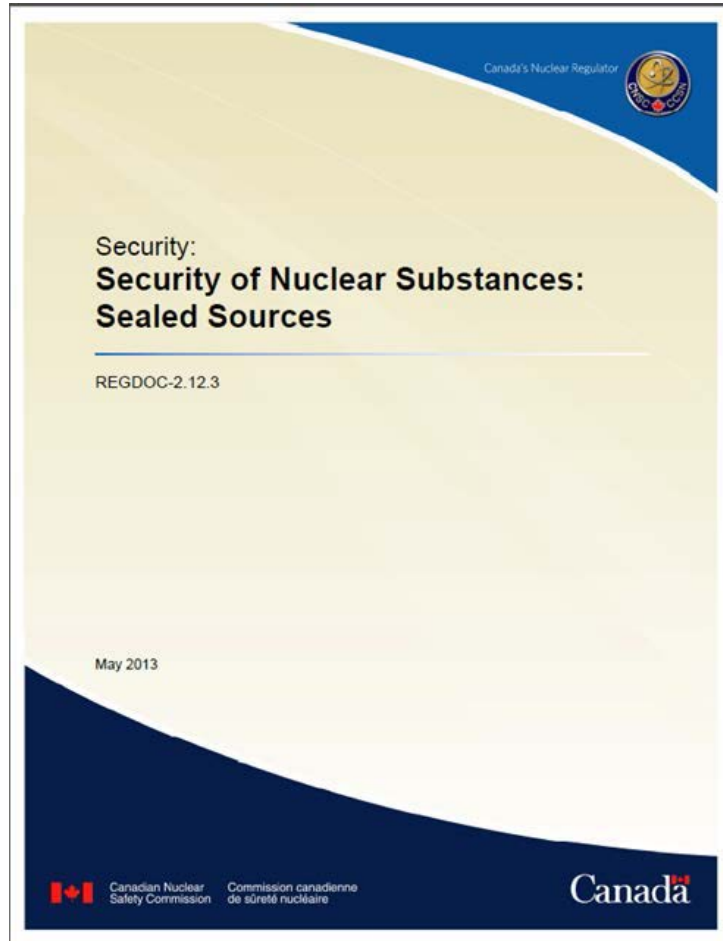
Industrial	83
Medical	4
Academic	1
Other	2



# Background of REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources* implementation



# Background of REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources* implementation (cont'd)



REGDOC-2.12.3 *Security of Nuclear Substances: Sealed Sources*, became a requirement for category 1-2 licensees as of May 31, 2015

This Regulatory Document will become a requirement for Category 3-5 licensees as of May 31, 2018

# Expectations for Category 3-5 Licensees

- Refer to REGDOC-2.12.3 *Security of Nuclear Substances: Sealed Sources*, section 3.1, table B

Security program sub sections	Category 1 - high risk	Category 2 - high risk	Category 3 - medium risk	Category 4 and 5 - low risk
Access control	<ul style="list-style-type: none"> <li>restrict access to authorized user only</li> <li>two-person rule (optimal)</li> <li>visitors, students, contractors must be escorted at all times by an authorized user</li> </ul>	<ul style="list-style-type: none"> <li>restrict access to authorized user only</li> <li>visitors, students, contractors must be escorted at all times by an authorized user</li> </ul>	<ul style="list-style-type: none"> <li>restrict access to authorized user only</li> <li>visitors, students, contractors must be escorted by an authorized user</li> </ul>	<ul style="list-style-type: none"> <li>source should be protected against unauthorized access and removal</li> </ul>
Intrusion detection system	<ul style="list-style-type: none"> <li>must provide immediate detection and be linked to a ULC-certified control room monitored by an operator 24/7 or an equivalent mechanism (i.e., continuous surveillance by operator) for detection, assessment, and communication with response personnel in case of security event</li> </ul>			
Perimeter and/or physical barrier	<ul style="list-style-type: none"> <li>must be protected with at least two physical barriers (i.e., walls, cages, secure containers) to separate the source from unauthorized personnel and provide sufficient delay to allow for immediate detection, and for response personnel to intervene before the adversary can remove the source</li> </ul>			
Security of storage	<ul style="list-style-type: none"> <li>secured with high quality padlock, high security lock or equivalent security system</li> <li>equipped with a minimum of one intrusion detection system or equivalent</li> <li>secure containers must be able to resist an attack by handheld tools</li> </ul>		<ul style="list-style-type: none"> <li>secured with high quality padlock, high security lock or equivalent security system</li> <li>equipped with a minimum of one intrusion detection system or equivalent</li> </ul>	<ul style="list-style-type: none"> <li>should be stored in a secure container or location</li> </ul>
Response protocol	<ul style="list-style-type: none"> <li>specific response protocol and contingency plan</li> <li>contact local law enforcement</li> <li>effective response time</li> <li>must develop a procedure in case of lost, stolen or malicious act involving radioactive sealed source</li> </ul>		<ul style="list-style-type: none"> <li>generic response protocol and contingency plan</li> <li>must develop a procedure in case of lost, stolen or malicious act involving radioactive sealed source</li> </ul>	<ul style="list-style-type: none"> <li>source should be protected against unauthorized access and removal</li> </ul>
Maintenance and testing	<ul style="list-style-type: none"> <li>maintenance and testing must be conducted at least every six months, and written records should be maintained</li> </ul>			



# Expectations for Category 3-5 Licensees (cont'd)

Security program sub sections	Category 1 - high risk	Category 2 - high risk	Category 3 - medium risk	Category 4 and 5 - low risk
Facility security plan	<ul style="list-style-type: none"> <li>reviewed annually or when important changes are done at the facility</li> <li>classified prescribed and/or sensitive and stored appropriately</li> <li>communicated on a need to know basis</li> <li>indicate measures in case of increased threat</li> </ul>		<ul style="list-style-type: none"> <li>reviewed on a regular basis or when important changes are done at the facility</li> <li>must be classified prescribed and/or sensitive and stored appropriately</li> <li>communicated on a need to know basis</li> </ul>	<ul style="list-style-type: none"> <li>prudent management practice</li> </ul>
Personal trustworthiness or background checks	<ul style="list-style-type: none"> <li>criminal records name check</li> <li>reference, education and employment verification</li> <li>drivers and contractors (i.e., carriers) with unescorted access to radioactive sources must undergo this verification</li> </ul>		<ul style="list-style-type: none"> <li>reference, education and employment verification</li> <li>criminal records name check</li> </ul>	<ul style="list-style-type: none"> <li>reference, education and employment verification</li> <li>criminal records name check (prudent management practice)</li> </ul>
Information security	<ul style="list-style-type: none"> <li>all prescribed information must be protected and be shared on a need to know basis</li> </ul>			
Security awareness program	<ul style="list-style-type: none"> <li>all authorized users, including staff who transport radioactive sources, must receive security awareness training on a regular basis</li> </ul>			
Vehicle security	<ul style="list-style-type: none"> <li>vehicle must be equipped with anti-theft or vehicle disabler and intrusion detection system, or equivalent measures</li> <li>vehicle must be equipped with a minimum of two technical barriers to prevent unauthorized removal of the radioactive source/device</li> <li>access must be restricted to authorized users only</li> <li>GPS or tracking system</li> <li>drivers must be equipped with a means of communication in case of emergency</li> <li>two-person rule (optimal)</li> <li>drivers and operators must undergo a trustworthiness verification</li> </ul>		<ul style="list-style-type: none"> <li>vehicle must be equipped with anti-theft and intrusion detection system or equivalent measures</li> <li>vehicle must be equipped with a minimum of two technical barriers to prevent unauthorized removal</li> </ul>	<ul style="list-style-type: none"> <li>source should be protected against unauthorized access and removal</li> </ul>
Transportation security plan	<ul style="list-style-type: none"> <li>must develop and submit a specific Transport Security Plan to CNSC for review and approval</li> </ul>	<ul style="list-style-type: none"> <li>must develop and maintain a generic Transport Security Plan</li> </ul>	<ul style="list-style-type: none"> <li>prudent management practices</li> </ul>	<ul style="list-style-type: none"> <li>source should be protected against unauthorized access and removal</li> </ul>



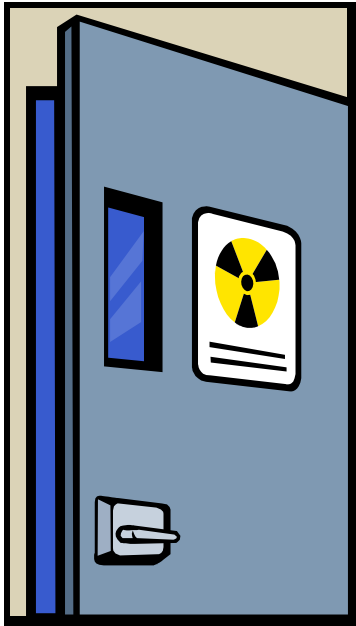
# Expectations for Category 3-5 Licensees (cont'd)

- Graded approach has been applied; For example, there are regulatory requirements for category 3 whereas for categories 4 and 5, application of prudent management practices are required
- A Site Security Plan is required for licensees with category 3 sources before May 31, 2018, and must be submitted to the CNSC Nuclear Security Division for review and acceptance



# Expectations for Category 3-5 Licensees (cont'd)

- Prudent Management Practices (PMPs) for category 4 and 5 include but are not limited to:
  - regular inventory verification
  - security awareness training for workers and contactors
  - restrict access to authorized personnel only
  - use adequate storage or secure container
  - some safety controls provide security protection



# Expectations for Category 3-5 Licensees (cont'd)

- PMPs are listed in the glossary of REGDOC-2.12.3 as:

*“Include ensuring that sealed sources are secured to prevent illegal use, theft or sabotage, and that a periodic inventory is carried out to ensure sealed sources are at their designated location and are secure.”*

# Current Challenges and Activities

- A REGDOC-2.12.3 requirement for category 3 licensees is the submission of Site Security Plans (SSPs) to the CNSC
  - SSPs are required for each licensed site at the category 3 level or higher
  - some licensees with category 3 sources have already submitted their SSP
  - letters are currently being sent out to those licensees the CNSC has identified may be at the category 3 level requesting the submission of a SSP



# Current Challenges and Activities (cont'd)

- Be on the look-out for a special security edition newsletter from the CNSC for category 3-5 licensees. Newsletter topics of discussion may include:



- information on how to determine your site's category
- what measures are required for a category 3-5 licensees
- what do category 4-5 licensees need to know about the regulations and how to apply prudent management practices



# Discussion and Feedback

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- What information would you like to see included in a newsletter to licensees?
- Do you have any other questions, comments or concerns?



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