



# Regulatory Oversight Report

## USE OF NUCLEAR SUBSTANCES IN CANADA: 2021



e-Doc 6832040 (PPT)  
e-Doc 6891627 (PDF)



CNSC Staff Presentation  
Commission Meeting  
November 1, 2022  
CMD 22-M32.A



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

Canada



## ROR on the Use of Nuclear Substances in Canada: 2021

- Key Messages
- Program overview
- COVID-19 impacts
- Licensee performance
- Updates requested by the Commission
- Engagement, international obligations and commitments
- Interventions
- Conclusion



CNSC staff inspecting a waste nuclear substance licensee (source: CNSC staff)



- CNSC staff assure safety through a strong licensing approach, a risk-informed inspection planning process, the use of graduated enforcement to bring licensees back into compliance and the ability to react quickly to events
- The COVID-19 pandemic continued to have an impact on regulatory oversight
- Overall compliance remained high but saw a downward trend in some safety and control areas
- CNSC staff were responsive to intervenor feedback

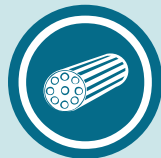
Any risks posed by the use of nuclear substances  
in Canada were managed appropriately



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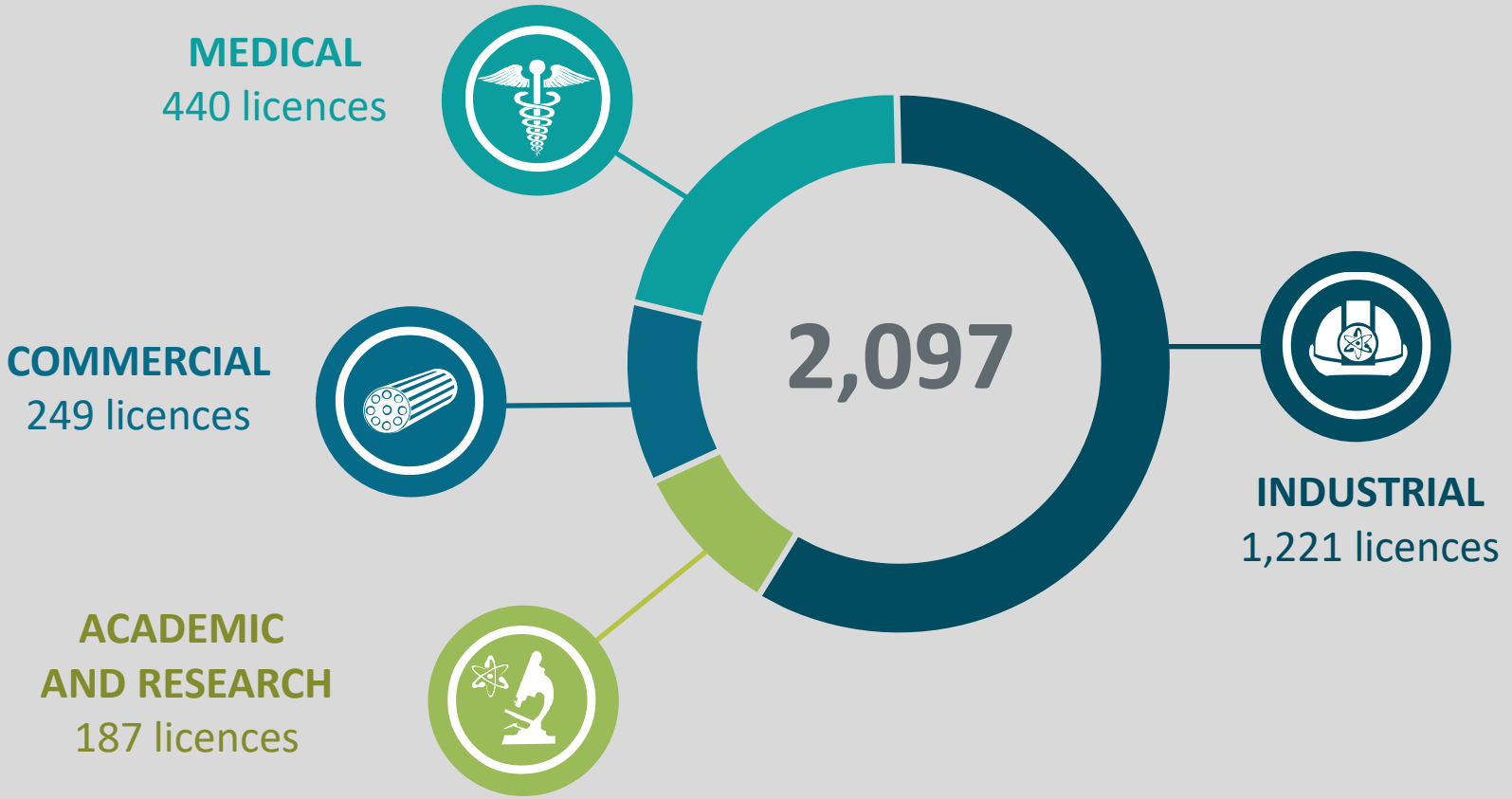
# ROR ON THE USE OF NUCLEAR SUBSTANCES IN CANADA: 2021



Program  
Overview



# Diverse Uses Of Nuclear Substances

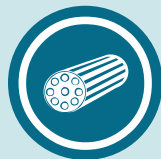




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# ROR ON THE USE OF NUCLEAR SUBSTANCES IN CANADA: 2021



COVID 19  
Impacts



- Licensing and certification activities remained largely unaffected by COVID-related restrictions
- Similar to 2020, highest impact was on inspections
  - Number of inspections conducted in 2021 exceeded the plan, but still lower than pre-pandemic average
- Correlation between the reduced number of inspections due to the pandemic and the compliance results from the past 2 years

COVID continued to impact regulatory oversight in 2021



# CNSC Response to COVID Impacts

Balanced regulatory oversight with the health and safety of CNSC and licensee staff

Considered organizational and staff risk tolerance for travel and in-person activities

Prioritized most critical inspections and will continue doing so moving forward

Shifted between remote and in-person inspections as the pandemic restrictions dictated

Staff responded to the continuously changing environment





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# ROR ON THE USE OF NUCLEAR SUBSTANCES IN CANADA: 2021



Licensee  
Performance



Various indicators used to measure licensee performance, 4 of which are reported on in the ROR:

**Compliance Performance (inspection data)**

**Enforcement Actions**

**Doses to Workers**

**Reportable events**

All indicators tell us that the use of nuclear substances and prescribed equipment in Canada remains safe and secure



## Overall Safety Control Area performance in 2021 across all sectors

### Management System

Satisfactory Rating: 97% of inspections  
Unacceptable Rating: 0

### Operating Performance

Satisfactory Rating: 87% of inspections  
Unacceptable Rating: 1\*

### Radiation Protection

Satisfactory Rating: 83% of inspections  
Unacceptable Rating: 3

### Security

Satisfactory Rating: 91% of inspections  
Unacceptable Rating: 1\*

### Conventional Health and Safety

Satisfactory Rating: 100 % of inspections  
Unacceptable Rating: 0  
(based on 5 waste nuclear substance licences)

### Environmental Protection

Satisfactory Rating: 100 % of inspections  
Unacceptable Rating: 0  
(based on 5 waste nuclear substance licences)

\* Same licensee, same inspection



- Sector level – inspection data indicates strong levels of compliance across all SCAs
- Sub-sector level – data analyses shows some decline in performance ratings for specific SCAs; rationale for this includes:
  - Decrease in the number of inspections
  - Transition to new regulatory requirements
  - Impact of the pandemic on licensee operations
  - Extrapolation from small data sets
- The ROR presents inspection data on annual basis, but inspection cycles are longer – not comparing the same licensees year-over-year
- Distinction between below expectations vs unacceptable ratings

CNSC staff continue to monitor any downward trends in performance



## Oversight activities in 2021

11 enforcement actions in 2021

10 orders and 1 administrative monetary penalty (AMP)

0 remain open

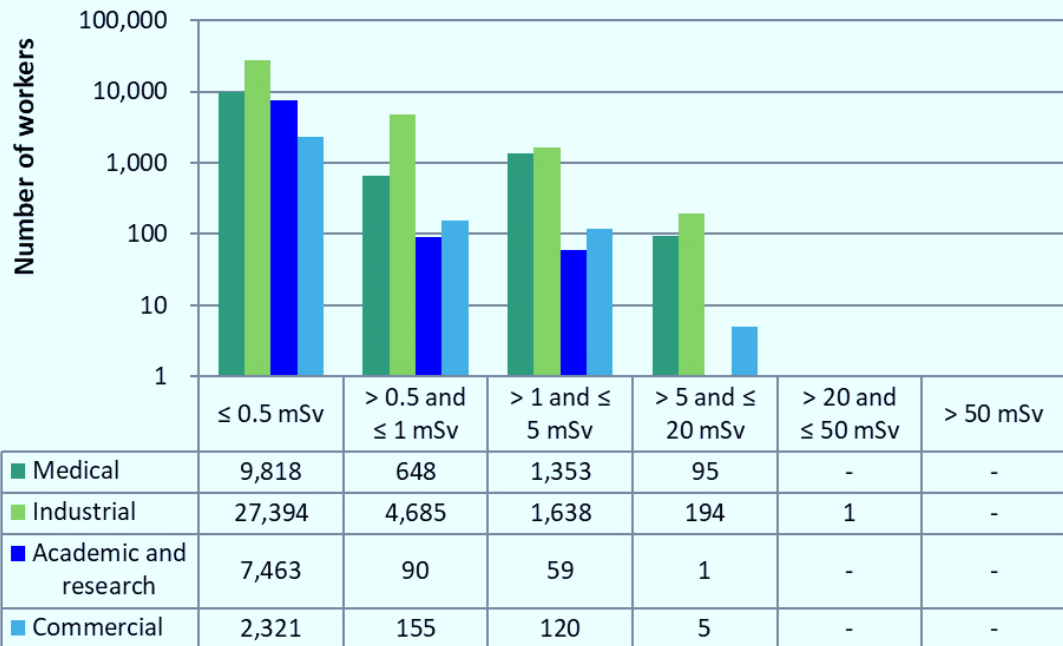
	2017	2018	2019	2020	2021
<b>Number of inspections</b>	944	949	863	371	583
<b>Number of enforcement actions resulting from inspections</b>	24	16	13	6	10*

\*1 order was issued to a non- licensee and therefore not issued after an inspection

Orders are closed when all conditions are satisfied



# Doses to Workers in 2021



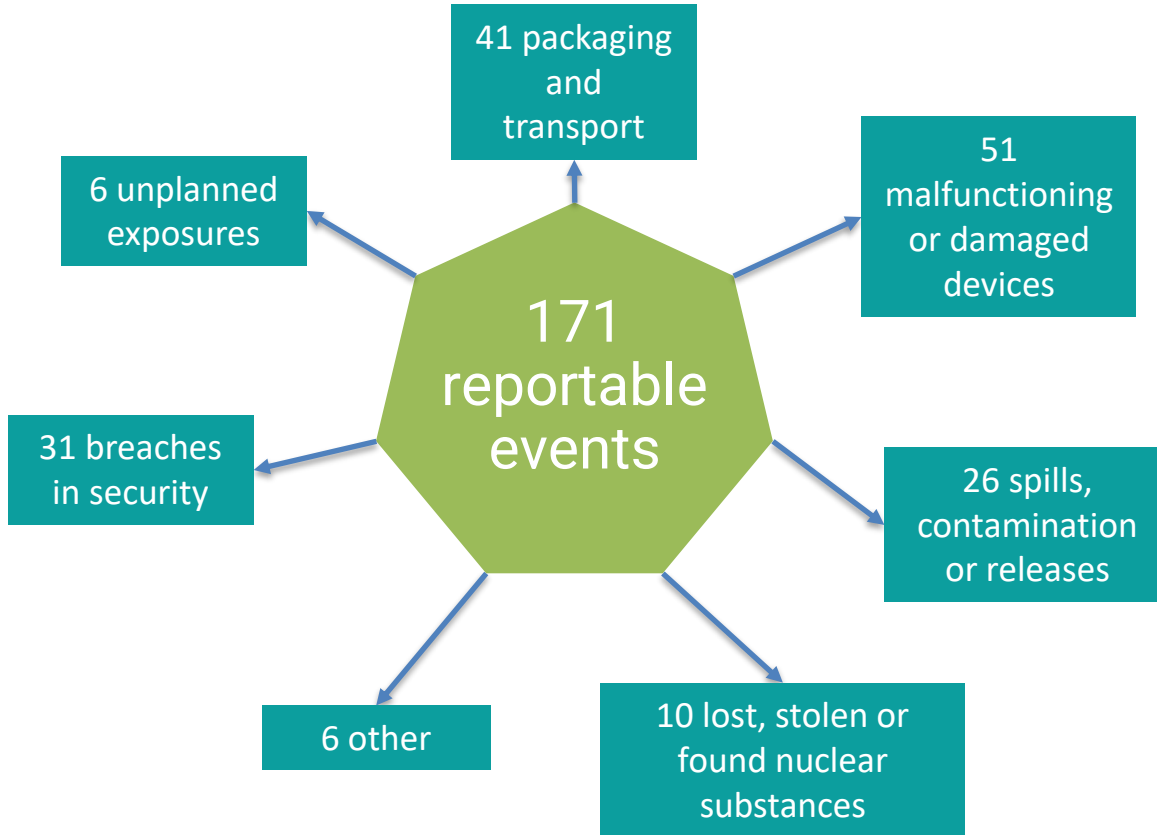
Doses to workers were low

## 56,040 workers

- 24,066 NEWs
  - 86% had doses less than or equal to 1 mSv
  - 0 reported doses above the regulatory limit
- 31,974 non-NEWs
  - 93% had doses less than or equal to 0.5 mSv
  - 7 reported doses greater than 1 mSv



# Reportable Events

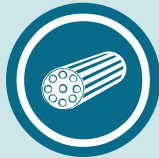


None of the events were risk-significant



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# ROR ON THE USE OF NUCLEAR SUBSTANCES IN CANADA: 2021



Updates Requested  
by the Commission





## Update on Kinectrics

- Event Initial Report – [CMD 21-M47](#)
- The Ontario Ministry of Labour, Training and Skills Development (MLTSD) has completed its investigation of the fatality at the Kinectrics Tiverton site.
- The MLTSD's investigation did not result in the issuance of any charges, penalties or additional orders or recommendations to Kinectrics.
- Kinectrics has completed all corrective actions from its internal investigation as well as from the four orders initially issued by the MLTSD.
- CNSC staff are satisfied with the corrective actions taken for the event and conclude that the event is closed.



## Update on Mississauga Metals and Alloys

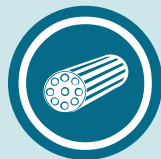
- Event Initial Report - [CMD 21-M49](#)
- Nuclear substances on site remain safe and secure
- Retaining a third party expert to undertake detailed waste characterization – in progress
- Working with other parties on establishing site authority – in progress



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# ROR ON THE USE OF NUCLEAR SUBSTANCES IN CANADA: 2021



Engagement,  
international  
obligations, and  
commitments



- Town hall sessions
- Publication of the DNSR Digest
- Targeted email campaigns
- Meetings with associations or working groups
- Presentations at industry events
- Articles in industry publications





Staff ensure that licensees implement measures required to meet international obligations and commitments by:

- Implementing IAEA codes, standards, and guidance documents
- Considering international requirements in Canadian regulations
- Adhering to the Treaty on the Non-proliferation of Nuclear Weapons by implementing the Canada-IAEA safeguards agreement
- Including import/export restrictions on licences when required



CNSC inspectors survey a licensee's inventory (*source: CNSC staff*)

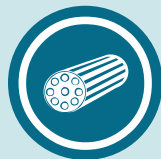
Canada adheres to international obligations and commitments



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# ROR ON THE USE OF NUCLEAR SUBSTANCES IN CANADA: 2021



Interventions



- CNSC staff met with CELA on two occasions since last year's Commission proceedings to discuss specific areas of concern that were brought up regarding previous RORs
- Changes to the 2021 ROR based on these discussions and other feedback:
  - Added a section on inspection planning
  - Included a sample inspection worksheet that shows criteria used during inspections
  - Added a section explaining the environmental protection SCA as it relates to licensees covered by this ROR
  - Re-added the section related to international obligations and commitments
  - Included additional information in the table of reportable events

CNSC staff are listening



## ROR on the Use of Nuclear Substances in Canada: 2021

Two requests for participant funding received – both requests approved for funding

Report was publicly available for written comments for a period of 45 days

Three interventions received

CNSC received 43 comments/recommendations





- Intervention process
- Scope and depth of the ROR
  - Many suggestions for additional information or more in-depth information
- Environmental protection
  - Including this SCA for all licensees
  - Disclosing environmental data



- Inspections
  - Assessing how to improve compliance
  - Planning for increasing the number of inspections
  - Addressing the issue of inspector resources
- Transparency
  - Identifying licensees in event summaries along with additional details
  - Including additional data in the ROR



## This report confirms:

- A rigorous process is in place to plan inspections on a priority basis
- Thorough assessments of licence applications ensure that licensee programs are compliant with regulatory requirements and that licensees are aware of their responsibilities
- Doses to workers remain low
- Non-compliances are addressed, and enforcement actions are closed in a timely manner
- Reported events are reviewed appropriately

The use of nuclear substances and prescribed equipment in Canada remains safe and secure



Fixed gauge measuring fill level in cans  
(source: CNSC staff)

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