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Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2023

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Summary	This Commission member document (CMD) presents the Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2023. Through inspections, reviews and assessments, Canadian Nuclear Safety Commission staff have concluded that licensees in the medical, industrial, academic and research, and commercial sectors made adequate provisions to protect the health, safety and security of persons and the environment.
Actions required	There are no actions requested of the Commission. This CMD is for information only.

CMD 24-M17

Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2023

Signed by:

2024-08-08

X Claire Pike

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Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

Canada

Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2023

Canadian Nuclear Safety Commission

Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2023

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Changes since last report

Change	Rationale
New format for the ROR.	In an effort to make the Regulatory Oversight Reports more accessible, changes to the format of the report have been made.
Added additional information on the compliance efforts and additional outreach and communication activities undertaken to address some of the compliance issues noted in the medical sector radiation protection safety and control area	This was done in response to a direction from the Commission after the presentation of the Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2022, in November 2023.
Incorporated: • compliance ratings for a 5-year period of the environmental protection and conventional health and safety SCAs for waste nuclear substance licences • a status update on the return to baseline inspection frequency • information on whistleblower/external complaints • an expanded list of all international obligations and commitments • additional detail related to reportable events	This information was added in response to comments from intervenors on the Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2022, in November 2023.
The data with respect to the doses to workers is presented differently.	Additional granularity in reporting by licensees was introduced and this caused a change in the way the data is presented.

Land acknowledgement

Licensees covered by this report are located across Canada, and CNSC staff acknowledge all relevant treaties and all traditional territories on which the licensees are situated.

Plain language summary

The *Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2023* provides information on licensee use of nuclear substances in the medical, industrial, academic and research, and commercial sectors. Most of these licensees are regulated by the Canadian Nuclear Safety Commission's (CNSC) Directorate of Nuclear Substance Regulation (DNSR). The regulatory oversight report (ROR) also includes waste nuclear substance licensees that are not reported on in other RORs and that are regulated by the Directorate of Nuclear Cycle and Facilities Regulation.

Based on their assessment of licensee performance results for 2023, CNSC staff continue to conclude that nuclear substances in Canada are used safely. This conclusion is based on an analysis of the indicators covered in this report – inspection compliance ratings, enforcement actions, doses to workers, and event reports.

In response to a direction from the Commission after the presentation of the *Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2022* in November 2023, CNSC staff incorporated additional information in the ROR. This was to outline the compliance efforts and additional outreach and communication activities undertaken to address some of the compliance issues noted in the medical sector radiation protection safety and control area (SCA). The Commission also directed CNSC staff to provide an update on the status of Mississauga Metals & Alloys Inc. (MM&A) as part of this ROR in the Record of Decision on the Review of Designated Officer Order dated March 21, 2023.

Responsiveness and transparency are key elements of the CNSC's commitment to building trust in the nuclear regulator. CNSC staff contacted all intervenors on the 2022 ROR individually to respond to their comments directly and in more detail than during the Commission proceeding in November 2023. In response to these interventions, CNSC staff considered suggestions related to presenting the data and incorporated these in the 2023 report.

Based on licensee performance in 2023, CNSC staff can confirm the following:

- The use of nuclear substances and prescribed equipment in Canada remains safe and secure. "Unacceptable" ratings were issued in only 0.9% of inspections, and the associated non-compliances were corrected in a timely manner.
- Effective doses to workers remain low. No nuclear energy workers (NEWs) or non-NEWs received a dose above regulatory limits.

- Escalated enforcement actions such as orders or administrative monetary penalties, were issued when deemed necessary to ensure safety and security.
- Events are reported, and corrective actions are implemented when required. More than 98% of reported events were considered to be of no safety significance based on the International Nuclear and Radiological Event Scale; no events were rated at higher than 1 on that scale.
- Engagement and outreach are key to openness and transparency.

Overall, in 2023, licensees made adequate provisions to protect health, safety, security and the environment with respect to the use of nuclear substances and prescribed equipment, and took the measures required to implement Canada's international obligations and commitments.

Referenced documents in this CMD are available to the public upon request, subject to confidentiality considerations.

1 Report overview

1.1 Background

Each year, the Canadian Nuclear Safety Commission (CNSC) publishes regulatory oversight reports (ROR), which offer information on the safety performance of licensees in Canada.

Learn more about regulatory oversight reports

1.2 Scope of report

This regulatory oversight report describes the regulatory oversight and safety performance of licensees who use nuclear substances in the medical, industrial, academic and research, and commercial sectors. These sectors are further broken down into subsectors for the purposes of reporting as follows:

Medical:

- Nuclear medicine
- Radiation therapy
- Veterinary nuclear medicine

Industrial:

- Portable gauge
- Fixed gauge
- Industrial radiography
- Oil-well logging

Academic and research:

- Laboratory studies and consolidated use

Commercial:

- Isotope production
- Processing of nuclear substances
- Distribution
- Servicing
- Calibration
- Waste nuclear substances

The report summarizes the safety performance of 1,457 licensees holding a total of 2,058 licences. In addition to the standard review of performance indicators, the 2023 ROR also includes an overview of the licensing process and information related to safeguards and other international commitments. The 2023 ROR provides an update on compliance and outreach efforts in the medical sector and on the ongoing situation at Mississauga Metals & Alloys Inc. Lastly, the report provides the Commission with information about outreach and engagement, which is a critical element of the CNSC's regulatory approach.

This ROR includes data in both the body and appendices. The main body of the report provides a high-level overview of the CNSC's regulatory efforts and the licensees' performance, while the detailed data to support this overview is found in the appendices.

For a description of the licensed activities covered in this report, refer to appendix A. Additional data on licensees covered by this ROR is available in appendix B.

1.3 Regulatory oversight

This ROR presents a set of metrics which, when taken together, provide a well-rounded picture of the performance of licensees. The metrics used in this report are:

- compliance performance
- enforcement actions
- doses to workers
- reportable events

The CNSC uses a risk-informed regulatory approach to these activities, applying resources and regulatory oversight commensurate with the risk associated with the regulated facility and activity.

2 Licensing overview

This section provides an overview of the licensing process for licences covered by this report. High-quality assessments help ensure that licensees have strong programs in place. These programs play a key role in supporting licensee performance and provide the foundation of compliance oversight.

The *Nuclear Safety and Control Act* (NSCA) authorizes the CNSC to issue licences to applicants who, in the opinion of the CNSC:

- are qualified to undertake the proposed licensed activity
- will make adequate provisions for the health and safety of persons, the protection of the environment and the maintenance of national security
- will take the measures necessary to implement international obligations to which Canada has agreed

The licence includes provisions that define and limit the scope of the authorized activities, as well as specific conditions that must be fulfilled by the licensee when conducting those activities. Licensees must inform the CNSC of any changes to their approved programs.

The *General Nuclear Safety and Control Regulations*, the *Nuclear Substances and Radiation Devices Regulations* and the *Class II Nuclear Facilities and Prescribed Equipment Regulations* lay out requirements for licence applications. In addition, the CNSC's REGDOC-1.4.1, *Licence Application Guide: Class II Nuclear Facilities and Prescribed Equipment* and REGDOC-1.6.1, *Licence Application Guide: Nuclear Substances and Radiation Devices* provide guidance on the

information to be submitted in support of an application. While there is no specific licence application guide for waste nuclear substances, applicants must comply with the requirements as laid out in the applicable regulations noted above.

CNSC staff perform risk-informed technical assessments of applications submitted to the CNSC to ensure that the applicant is capable of and committed to complying with NSCA requirements, as well as the requirement to maintain an effective radiation safety program in accordance with the *Radiation Protection Regulations*. The licence application guides assist applicants in providing the information needed by the CNSC to make this determination. The level of information that must be submitted and the expected complexity of the radiation protection program are commensurate with the risk of the licensed activity.

For licence renewals, in addition to reviewing the submitted application, CNSC staff review compliance information such as inspection results, reported events and annual compliance reports before making a licensing decision.

The information required to amend a licence during the licence period will vary depending on the change requested. Each amendment request is reviewed with the same risk-informed lens as any application.

Designated officers (DOs) are staff members in specific positions who are authorized by the Commission to carry out specific duties under section 37 of the NSCA. Given the high volume of licensing decisions and the relatively low risk to the public, the Commission has authorized DOs to make licensing decisions related to the licensees covered in this report. Additional information about designated officer decisions can be found in appendix B.

Rigorous assessments of licensee programs, along with timely desktop reviews of annual reports and changes submitted by the licensee, are critical in ensuring that licensees have appropriate programs and people in place for the safe and secure use of nuclear substances in Canada.

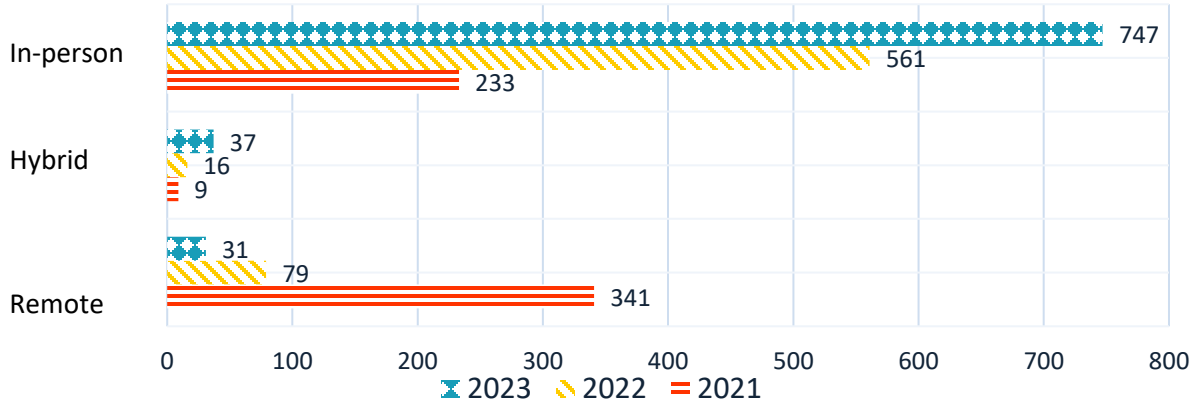
3 Inspection overview

Regular inspections verify that licensees are complying with regulatory requirements and the conditions of their licence as well as verifying that licensees have implemented the radiation safety programs approved by the CNSC. In this way, the CNSC can ensure that licensees are operating safely and adhering to their licence conditions.

The inspection planning process used by CNSC staff takes a risk-informed approach that prioritizes inspections by applying a baseline inspection frequency and taking into account other factors, such as declining performance. This process was described in detail in section 2.0 of the 2021 ROR.

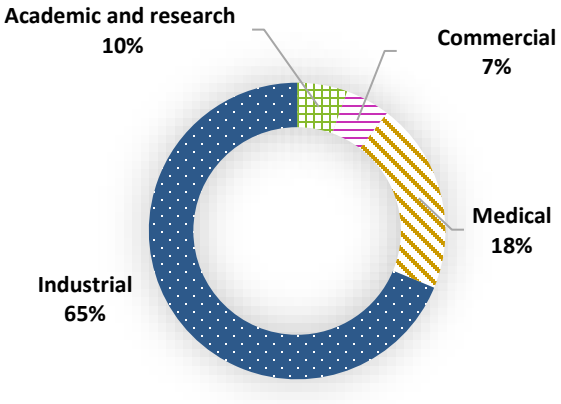
Inspections in 2023 included a mix of remote, in-person and hybrid inspections. In 2023, staff performed 815 inspections (747 in-person, 37 hybrid and 31 remote). CNSC staff performed 159 more inspections in 2023 compared to 2022. In addition, in 2023, staff performed 14 more inspections than originally planned. A complete list of inspections can be found in appendix C. Figure 1 shows the transition in the types of inspections performed from 2021 to 2023, with the number of in-person inspections increasing and the number of remote inspections decreasing. Staff see this as a positive trend; while remote inspections are a useful tool, CNSC staff believe that, in most cases, onsite inspections are the preferred option.

Figure 1: Comparison of the types of inspections performed from 2021 to 2023



Most of the inspections (83%) were conducted in the industrial and medical sectors, as shown in figure 2. This is to be expected, as these 2 sectors make up approximately 79% of all licences.

Figure 2: Percentage inspections by sector in 2023



CNSC staff continued to address the inspection backlog caused by pandemic restrictions and continued to increase the number of annual inspections to regain the baseline inspection frequency determined by the CNSC's risk-informed compliance program. While CNSC staff cannot predict an exact date by which the baseline inspection frequency will be achieved, staff can confirm that progress is being made as the number of licensees overdue for inspection decreases each year as more inspectors are trained and more inspections are conducted each year. While overdue inspections are prioritized, it is about balancing these with other priorities including licensees in poor performing subsectors and those performing high risk activities.

Primary responsibility for safety lies with the licensee; therefore, the CNSC expects licensees to comply with regulatory requirements whether they are subject to a CNSC inspection or not. Nonetheless, inspections are an important component of regulatory oversight that allow the CNSC to verify licensee compliance with those requirements. Moreover, they provide an opportunity for inspectors to intervene early with licensees when performance starts to decline.

While inspections are important, they are not the only regulatory oversight tool available to the CNSC to assess licensee compliance. Throughout 2023, CNSC staff also reviewed annual compliance reports submitted by licensees and followed up on notifications and reportable events. Both activities can provide indicators of licensee performance to supplement inspection findings. In addition, licensee programs are reviewed and evaluated as part of licence assessments, as described in earlier in the licensing overview section of this report.

CNSC staff also followed up on 12 external complaints received in 2023. Of these 12 complaints, 7 involved licensees covered by this report. In response to these complaints, 5 inspections were performed in 2023 and 1 is scheduled for 2024. In one case the complainant, when contacted for additional information, decided not to pursue the complaint. The other 5 external complaints did not involve licensees but rather, were related to the transport of nuclear substances, to consumer products available for sale and to concerns about radiation exposure. In all cases, where contact details were available, CNSC staff contacted the complainants and performed follow-up to ensure concerns were addressed.

Considering the full suite of licensing and compliance activities, the increase in the number of inspections in 2023, as well as the ability to prioritize the most risk significant inspections, CNSC staff are confident in their regulatory oversight of licensees covered by this report.

Learn more about The CNSC's approach to compliance verification and enforcement

4 Compliance overview

4.1 Compliance framework

To measure licensee performance, CNSC staff use the well-established Safety and Control Area Framework as described in appendix D. The framework includes 14 safety and control areas (SCAs) covering all technical areas of regulatory oversight. During licensing and compliance activities, CNSC staff evaluate the licensee's performance within each relevant SCA by reviewing licensee documents and conducting inspections. Owing to the broad nature of the different activities conducted by the licensees covered, not all SCAs apply to all activities or all licensees. CNSC staff acknowledge that all SCAs are important; however, the ROR focuses on those that are most effective in providing an overall indication of the safety performance of the licensees covered by this report, namely, the management system, operating performance, radiation protection, and security SCAs. Performance data in the environmental protection and the conventional health and safety SCAs is also provided for the waste nuclear substance licensees. These licensees, unlike other licensees covered by this report, have a higher potential for environmental releases and, given the nature of the work performed, there is a potentially higher risk in conventional health and safety.

All relevant SCAs are assessed during inspections, and individual SCAs normally include multiple assessment areas. The areas or items to be assessed arise from regulatory requirements, licence conditions, and documents referenced in the licence. Compliance ratings for each SCA are calculated at the end of each inspection or, in the case of waste nuclear substance licences, on an annual basis.

A description of the ratings is provided in appendix E.

4.2 Overall compliance results

A total of 7 unacceptable ratings, as defined by the CNSC, were issued in 2023. Four unacceptable ratings were issued in the radiation protection SCA, 2 in the operating performance SCA, and 1 in the security SCA. The unacceptable ratings were issued to 7 different industrial sector licensees. In all cases, an order was issued as a result of the inspection. Additional information on these unacceptable ratings can be found in the SCA assessment section. No unacceptable ratings were issued in the SCAs not covered in this report.

In all cases, where items of non-compliance were identified or where escalated enforcement action was used, CNSC staff verified that licensees took appropriate corrective actions.

Overall licensee performance has remained relatively stable over the past 5 years in all SCAs covered by this report. At the sector and subsector level, there is some variation: some areas

continue to see lower or declining performance, while others show improving performance. A brief overview of the performance in the key SCAs is provided starting in the SCA assessment section, with more details provided in appendix F. Appendix G presents the inspection results by subsector, offering another perspective on licensee performance in 2023.

Before discussing compliance performance trends in greater detail, it is important to provide some context to assist in interpreting performance data.

Calculating an SCA rating

When considering the performance data summarized in this report, it is important to understand how an SCA rating is reached. This topic was covered in detail in section 2.0 of the *Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2022*. The conservative approach used to rate licensee performance impacts the overall trends at the sector and subsector level.

It is important to note that a below expectations rating in any SCA as the result of a single inspection, does not necessarily point to a failure in the licensee's programs or indicate unsafe work practices. Escalated enforcement, such as the issuance of an order, would be used to address any immediate risks.

Additional considerations

In the context of safety significance, when reviewing the compliance data, the metric of primary relevance is the number of unacceptable ratings. In contrast to a below expectations rating, staff will issue unacceptable ratings in cases where licensee actions are unsafe. These situations are addressed immediately, typically through the issuance of an order, which is not closed until the CNSC is satisfied with the licensee's corrective actions. As noted above, in 2023, only 7 unacceptable ratings were issued across all SCAs.

Finally, when interpreting compliance performance data, it is also important to bear in mind that the data reported in the ROR reflects the licensee's performance at the time of inspection. In reality, following an inspection, CNSC staff track and follow up on all required corrective actions to ensure that all items of non-compliance have been addressed to their satisfaction (in other words, to ensure that the licensee is compliant). However, the improvements in performance will not be reflected in the ROR until that licensee is next inspected. Inspection frequency varies with the risk ranking of the licensed activity. In most cases, licensees are only inspected every 3-5 years with only the higher risk activities being inspected more frequently. Year-over-year trending in the ROR is therefore not reflective of individual licensee performance.

5 Assessment of safety and control areas

5.1 Management system

Total inspections performed: 727

In 2023, all sectors performed well in this SCA, with 97.4% of inspections receiving satisfactory ratings. This is comparable to the 5-year average of 96.8%.

There were no unacceptable ratings in this SCA.

Refer to appendix F and appendix G for additional information.

5.2 Operating performance

Total inspections performed: 746

In 2023, overall licensee performance in this SCA remained stable, with 84% of inspections yielding satisfactory ratings, which is the comparable to the 5-year average of 85%.

While all sectors showed stable performance overall compared to the 5-year average for the sector, there were 2 subsectors that had noticeable changes. The radiation therapy subsector in the medical sector showed a marked decline in performance in this SCA with only 40% of inspections achieving a satisfactory rating. It is important to note though that only 5 inspections were performed where this SCA was considered so this performance rating may not be indicative of the subsector as a whole since only about 10% of the licensees in this subsector were inspected in this SCA.

In the industrial sector, the fixed gauge subsector has seen a reversal of performance trending for the first time in 5 years. There was an increase of 7% (up to 74%) of the inspections achieving a satisfactory rating compared to 2022 while doing more inspections over the course of the year. In early 2023, as part of a wider DNSR Digest article that discussed the most common non compliances by sector, staff reshared a detailed checklist on vessel entry, since this is one of the areas of continuing non-compliance for licensees in the fixed gauge subsector. This information was also published on the CNSC website in 2023. A second DNSR Digest article on the do's and don'ts of using gauges was also share with licensees in 2023.

There were 2 unacceptable ratings in this SCA related to licensees in the fixed gauge subsector. Orders 1145 and 1168 were issued in response to these inspections. In both cases, the licensees complied with the terms of the orders to the satisfaction of the CNSC and the orders were closed.

Refer to appendix F and appendix G for additional information.

5.3 Radiation protection

Total inspections performed: 763

Overall, the percentage of inspections resulting in a satisfactory rating in 2023 was stable at 77%. This is just slightly lower than the 5-year average of 80%. Both the commercial and medical sectors showed a decline in performance of 12% and 9% respectively.

In the commercial sector, 79% of inspections achieved a satisfactory rating which is a drop from 91% in 2022. In light of the small number of licensees in each subsector within this sector, a breakdown of ratings by subsector is not considered. It would be difficult to identify trends in the subsectors given the low number of inspections in many of them. For example, in the calibration subsector only 4 inspections were performed in this SCA however 2 of the 4 received below expectation ratings. This is likely not indicative of the entire subsector.

Overall, the medical sector saw a decline of 9% in 2023 compared to 2022 with only 59% of inspections being given a satisfactory rating in this SCA. The nuclear medicine subsector specifically showed a decline from 63% in 2022 to 54% in 2023. This topic was specifically addressed in a briefing to Commission in May 2024 (CMD 2-M23) in response to the direction of the Commission following the presentation of the 2022 ROR in November 2023. Additional information on this medical sector is also provided in the next section.

There were 4 unacceptable ratings issued in this SCA. All 4 were issued to licensees in the industrial sector: 3 in the portable gauge subsector and 1 in the industrial radiography subsector. Orders 1023, 1015, 1657 and 604 were issued in response to these finding. In all cases, the licensees complied with the terms of the orders to the satisfaction of the CNSC and the orders were closed.

Refer to appendix F and appendix G for additional information.

5.3.1 Radiation protection SCA in the medical sector

In response to direction from the Commission after the presentation of the ROR on the Use of Nuclear Substances in Canada: 2022 in November 2023, this section provides information on the compliance efforts and additional outreach and communication activities undertaken to address some of the compliance issues noted in the medical sector radiation protection SCA.

The radiation protection SCA in the medical sector has been an ongoing area of focus for the CNSC, particularly in the nuclear medicine subsector in part due the ratings achieved in this SCA. As noted earlier in the report, the rating algorithm used is very conservative so caution must be exercised when drawing conclusions based on ratings alone.

Evaluation by CNSC staff

As far back as 2017, the CNSC initiated a review of the elements of radiation protection programs and the role of the radiation safety officer (RSO) among licensees in the medical and academic and research sectors. This was presented to the Commission in October 2017 (CMD 17-M44, Enhancing Oversight of Radiation Safety Officers and Radiation Protection Programs for Nuclear Substance and Radiation Devices Licensees). While there was no systemic safety concern identified, the trending indicated that opportunities existed to strengthen licensee radiation protection programs and improve regulatory compliance by enhancing guidance provided to licensees.

In response to this review, the CNSC initiated the development of a regulatory document and an evaluation of RSOs to analyze factors that contribute to their success. The final evaluation report was published in September 2019. This evaluation found that, in the medical sector, operational contexts can be vastly different. This sector can include a wide variety of licensees – from large, amalgamated hospitals, with complex operation and multiple sites, to small community hospitals with only one site. In general, resource constraints and the important focus on patient care may add an additional layer of complexity to the role of RSOs in the medical sector. In response to this evaluation, CNSC staff took some specific actions including:

- The publication of Welcome Package: Applicant Authority in December 2020 explaining the main responsibilities of an Applicant Authority and guidance on how to achieve them
- The publication of REGDOC-1.6.2, *Radiation Protection Programs for Nuclear Substances and Radiation Devices Licences* in August 2021 which provides guidance on the development, implementation, management and assessment of a radiation protection program.
- The promotion of a list of mentors who are Canadian Radiation Protection Association members willing to share knowledge and experience in their specialty areas with other licensees.

Even with this additional guidance and support, staff continued to see a downward trend in the radiation protection SCA for the medical sector, in particular in the nuclear medicine subsector.

Impact of the amended *Radiation Protection Regulations*

A closer look at the most common non-compliances in this SCA showed that a large number were related to the changes in the *Radiation Protection Regulations* which were amended in 2020-in particular, related to new requirements for contamination monitoring equipment and to updated extremity monitoring requirements. In addition to informing licensees of the publication of REGDOC-2.7.1, Radiation Protection and REGDOC-2.7.2, Dosimetry via the DNSR Digest in 2021, CNSC staff undertook a number of other initiatives to inform licensees and to promote compliance with the updated regulations.

- The DNSR Digest was leveraged again in 2022 and 2023 to send information out to licensees including reminder articles on:
    - the updated and new requirements in the regulations.
    - extremity dosimetry requirements
    - requirements related to pregnant and breastfeeding NEWs
- In July 2022, an email was sent to licensees related to extremity monitoring including information on dosimetry requirements and information on how to comply.
- In June 2023, a targeted email was specifically sent to all nuclear medicine RSOs and applicant authorities to provide an update on the CNSC's expectations regarding meeting regulatory requirements in response to the ongoing trend of poor compliance with the amended *Radiation Protection Regulations.*
- In July 2023 staff offered licensees a webinar on the requirements for contamination meter calibration and methods for establishing detection efficiency. The virtual webinar was recorded and was released on the CNSC YouTube channel and a "Frequently Asked Questions" was published on the CNSC website. A follow-up DNSR Digest was also sent out to all licensees on the expectations regarding contamination monitoring equipment, including links to the webinar and tools to help licensees with calibration calculations.

Other recent initiatives

The DNSR Digest continued to be a vehicle for sharing more generic information with licensees including articles on:

- how to prepare for an inspection
- the most common non-compliances cited by sector
- the mentors list available on the CNSC website

And as recently as May 2024, an additional DNSR Digest article on the updated requirements on the use of extremity dosimetry was sent to licensees as this continued to be an area of noncompliance despite the guidance provided by the CNSC.

CNSC staff continue to participate in working group meetings with the Canadian Radiation Protection Association where the performance of the nuclear medicine subsector in this SCA was discussed. Discussions were held about the possibility of providing webinars geared to nuclear medicine technologists.

The Canadian Association of Medical Radiation Technologists (CAMRT) is the national professional association and certifying body for radiological, nuclear medicine and magnetic resonance imaging technologists and radiation therapists. They are an authoritative voice on the critical issues that affect its members and their practice. CNSC staff have also reached out to CAMRT to discuss the ongoing downward performance in this SCA and they are supportive of working together to try to address the issue.

When considering licensee performance, the CNSC takes into consideration other metrics in addition to compliance ratings as detailed in the briefing to Commission in May 2024 (CMD 24-M23. Doses to all workers in the nuclear medicine subsector remained very low in 2023. Additionally, there were no risk-significant events reported to the CNSC for this subsector, and all non-compliances identified by inspectors were corrected to the satisfaction of CNSC staff. Based on assessment of these performance results CNSC staff conclude that despite an apparent downward trend in the radiation protection SCA ratings, nuclear substances in nuclear medicine are used safely. Moving forward in 2024, staff will continue to monitor licensee performance in the medical sector.

5.4 Security

Total inspections performed: 714

Nuclear substance licensees maintained good compliance with the security requirements, including those incorporated in REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material*. In 2023, 92% of licensees inspected in this SCA received satisfactory ratings. Although there was some fluctuation between sectors, overall, the rate has remained stable and consistent with the 5-year average of 93%.

There was 1 unacceptable rating in this SCA. Order 1169 was issued to a licensee in the portable gauge subsector in response to an inspection. The licensee complied with the terms of the order to the satisfaction of the CNSC and the order was closed. Refer to appendix F and appendix G for additional information.

5.5 Conventional health and safety

Total inspections performed: 3

The CNSC requires waste nuclear substance licensees (WNSLs) to have a program in place to manage workplace safety hazards and to protect workers, given the nature of the work and the introduction of other hazards that need to be mitigated. For example, WNSLs handle, process, store and transport different types of radioactive waste, which may require the use of overhead cranes and large equipment. The licensed activities directly introduce mechanical, ergonomic, chemical, electrical and fire hazards that may need to be mitigated.

Consistent with previous years, in 2023, no WNSLs received below expectations or unacceptable ratings in the conventional health and safety SCA.

The licensees continued to implement health and safety programs in accordance with the applicable occupational health and safety legislation to protect the health and safety of their workers.

Refer to appendix F for additional information.

5.6 Environmental protection

Total inspections performed: 3

WNSLs are required to have specific programs in place to identify, control and monitor all releases of radioactive and hazardous substances and their effects on the environment.

Consistent with previous years, in 2023, no WNSLs received below expectations or unacceptable ratings in the environmental protection SCA. The WNSLs continued to manage and monitor environmental releases relating to licensed activities.

WNSLs reported 3 events that could potentially have impacted the environment in 2023. Information on these events can be found in the event summaries of appendix J (event IDs: WNSL-5, WNSL-9, WNSL-15). All radiological releases were below regulatory limits, and there was no impact on the health and safety of persons or on the environment. With regard to non-radiological releases, no adverse effects on people or on the environment were likely as a result of these releases.

Refer to appendix F for additional information.

For additional information on how the environmental protection SCA is considered for other licensees covered by this report, please see section 3.7 of the Regulatory Oversight Report on the Use of Nuclear Substances in Canada:2021.

6 Enforcement

Appendix H presents enforcement action data by sector over the past 5 years and includes a list of all orders and administrative monetary penalties (AMPs) issued in 2023.

The CNSC uses a graduated approach to enforcement in order to encourage compliance. When a non-compliance is identified, CNSC staff assess the significance of the non-compliance and determine the appropriate enforcement action, including, but not limited to, orders and AMPs. Most enforcement actions are issued as a result of findings during inspections.

In 2023, CNSC staff issued 9 orders and 3 AMPs to licensees covered under this report. All orders and AMPs were issued to licensees in the industrial sector, which is consistent with trends in previous years. All 9 orders and 1 AMP were issued in response to inspections The other 2 AMPs were issued in response to events reported to the CNSC. In the case of all 9 orders, the licensees complied with the terms of the orders to the satisfaction of the CNSC and the orders were closed. All 3 AMPs were paid as required. While there was an increase in the number of enforcement actions issued in 2023 compared to 2022, the numbers are still low in comparison to the number of inspections performed and the number of events reported. Of the 815 inspections performed and the 184 events reported, on only 12 occasions were the issuance of an order or an AMP deemed necessary which supports CNSC staff's assessment that licensee performance remains acceptable.

A graduated approach to enforcement is used to restore compliance when necessary. Regulatory judgment is applied and multiple factors, such as the severity of the non-compliance and the associated risk, are considered to determine the most appropriate enforcement strategy for a given situation.

Enforcement actions are posted on the CNSC's regulatory actions web page as they are issued.

7 Effective doses to workers

Appendix I presents the full datasets, as well as additional information, on effective doses to workers reported in 2023. Licensees are required to keep radiation doses to persons below regulatory limits and as low as reasonably achievable (ALARA) in accordance with the radiation protection program referenced in their licence.

Licensees must report the doses to their workers, whether estimated or measured, as part of their annual compliance reports (ACRs). In 2023, doses were reported for 52,550 workers in the 4 sectors. Of those workers, 21,917 were nuclear energy workers (NEWs). The remaining 30,633 were not identified as NEWs and are referred to as non-NEWs in this report. Exposures to radiation continued to be very low for workers covered in this ROR for 2023, consistent with previous reporting years.

In 2023, the annual compliance reports were updated to add granularity to the dose reporting at the lower levels of exposure. Previously, licensees reported the number of workers in the 1 mSv-5 mSv category. Beginning in 2023, they were required to report the number of workers in the 1 mSv -2 mSv and the 2 mSv - 5 mSv categories. This allows CNSC staff to report on effective doses at a more detailed level. This has impacted some of the trending reported in Appendix I, however, the doses in these new categories will be trended as previously done, moving forward.

In 2023, no NEWs received effective doses above the regulatory limit of 50 mSv per calendar year and in fact, no effective doses were reported above 20 mSv for NEWs. Of the 30,633 non-NEWs for which doses were reported, there were no reported effective doses above the regulatory limit of 1 mSv/year.

There was strong performance in all sectors in 2023, with effective doses to all workers remaining generally low and below all regulatory limits.

8 Reportable events

Appendix J provides data on the types of events reported over 5 years and provides a summary of each event reported in 2023.

Licensees are required to have programs in place to manage unplanned events and accidents. The events that warrant mandatory reporting and the content of those reports are set out in the NSCA, its regulations and the licence conditions. REGDOC-3.1.3, *Reporting Requirements for Waste Nuclear Substance Licensees, Class II Nuclear Facilities and Users of Prescribed Equipment, Nuclear Substances and Radiation Devices*, sets out requirements and guidance for reports and notifications that licensees must submit to the CNSC. CNSC staff review, assess and track all events reported by licensees.

Since 2014, reported events have been rated using the International Nuclear and Radiological Event Scale (INES), a 7-point scale for communicating the safety significance of nuclear and radiological events to the public. Note that the scale is not a tool for comparing safety performance among facilities or organizations, but rather, for consistently communicating the safety significance of events to the public. CNSC staff assign a ranking to each event based on the INES scale. The events reported to the CNSC by the licensees covered in this ROR typically fall into level 0 (no safety significance) or level 1 (an anomaly that may have an impact on defence in depth).

CNSC staff assessed 184 events related to nuclear substances and prescribed equipment in 2023. Of those events, 181 were rated as INES level 0. The remaining 3 were rated as INES level 1 and were related to the loss or theft of portable gauges. Two of these portable gauges have been recovered and 1 remains missing. One portable gauge was discovered missing as part of

an inventory check however, this gauge was later recovered at a waste facility. In the second case, a trailer containing a portable gauge was stolen. With the use of a tracking device on the trailer, the gauge was recovered within 24 hours. In the final case, a vehicle, carrying a portable gauge, was stolen from a private residence. This gauge is still missing. The presumption with stolen portable gauges is that they were likely stolen for their potential value as a tool or that they were an incidental theft when a vehicle was stolen as opposed to being stolen for the purpose of obtaining radioactive material. A portable gauge is categorized as Category 4, based on internationally established standards as described in the IAEA's Categorization of Radioactive Sources. This means that this radioactive material is classified as "low risk" and is unlikely to be dangerous.

While there has been a slight uptick in reportable events in 2023 with 184 reported in 2023 compared to the 167 reported in 2022, due to the nature of the events and the number of licensees covered by this report, CNSC staff are comfortable with this slight increase. In fact, staff are encouraged by the reporting culture of licensees as this may be an overall indicator of a strong safety culture amongst licensees.

At the December 2023 Commission proceedings, staff presented an event initial report (CMD 23-M51.A) related to inaccuracies between paper records and actual thyroid screening tests for staff in a nuclear medicine department. As a result of this notification, an AMP was issued to an individual in February 2024. The AMP was subsequently paid by the individual. An update on this situation will be provided to the Commission in September 2024.

For all events reported to the CNSC, licensees implemented appropriate response measures to mitigate the impacts, limit radiation exposure to workers and the public, and maintain security. CNSC staff reviewed the measures in all cases and found them to be satisfactory.

8.1 Update on Mississauga Metals & Alloys Inc.

Mississauga Metals & Alloys, Inc. (MMA) declared bankruptcy on August 20, 2021, and its waste nuclear substance licence expired on February 28, 2022. Since 2021, staff has provided updates to the Commission as part of the annual Regulatory Oversight Report on the Use of Nuclear Substances in Canada.

A Designated Officer Order was issued to Richter (Bankruptcy Trustee), MMA and 1420561 Ontario Inc. (land owner) on March 21, 2023. The Order required them to take measures to ensure the safety and security of the nuclear substances on site, eventually culminating with the removal of the nuclear substances from the property. An opportunity for these entities to be heard regarding the Order was subsequently held by the Commission, and the Commission's decision to revoke the Order was issued on November 1, 2023.

The key direction in this decision to CNSC staff was as follows:

- Proceed with the characterization of the nuclear substances
- Access and use the existing financial guarantee towards the characterization of the nuclear substances
- Update the Commission on a regular basis

In addition, as a result of a site visit, an order was issued by an inspector to both David Sharpe, President of MMA, and MMA on May 24, 2023. The order required them not to undertake any activities associated with the trailers containing the nuclear substances. On May 30, 2023, Mr. Sharpe and MMA confirmed that they did not wish to exercise their opportunity to be heard on this matter. On July 25, 2023, the Designated Officer confirmed the order issued on May 24, 2023.

CNSC staff most recently provided the Commission with an update in May 2024 (CMD 24-M22)outlining steps taken by the CNSC staff since the Record of Decision was issued. CNSC staff are in the process of addressing the Commission's decision on this matter. Specifically, the financial guarantee has been accessed and used towards this matter. In addition, the procurement process to retain a qualified party to undertake the characterization has been launched.

The CNSC continues to engage with other levels of government about the site while ensuring the safety and security of the nuclear substances on the property.

9 Consultation and Engagement

9.1 Indigenous Consultation and Engagement

The common-law duty to consult with Indigenous Nations and communities applies when the Crown contemplates actions that may adversely affect potential or established Indigenous and/or treaty rights. The CNSC ensures that all of its licence decisions under the NSCA uphold the honour of the Crown and consider Indigenous peoples' potential or established Indigenous and/or treaty rights pursuant to section 35 of the Constitution Act, 1982.

In previous years, Indigenous Nations and communities have not expressed a specific interest in this ROR and very little interest in the licensed activities that it covers. However, CNSC staff have participated in general outreach activities with Indigenous Nations and communities to provide information on the packaging and transport of nuclear substances.

For the 2023 ROR, the Manitoba Métis Federation and the Kebaowek First Nation have requested and received participant funding. CNSC staff remain open and committed to ongoing engagement and communication with any interested Indigenous Nations and communities who may express an interest in discussing the topics and licences covered in this ROR.

9.2 Public Consultation and Engagement

The NSCA mandates the CNSC to disseminate objective scientific, technical and regulatory information to the public concerning its activities and the activities it regulates. CNSC staff fulfill this mandate in a variety of ways, including hosting in-person and virtual information sessions and through annual regulatory reports.

The CNSC carries out engagement and outreach activities to facilitate communication on licensed activities and regulatory requirements. Engagement and outreach are critical elements of the CNSC's regulatory approach. Given the breadth of licensees regulated in the area of nuclear substances, a particular focus is on reaching and engaging with licensee communities, a practice that leads to increased awareness and better understanding of the regulatory process and requirements. CNSC staff leverage a variety of fora to engage with licensees and promote the use of the tools that are developed to support compliance with regulatory requirements.

In 2023, outreach was done through a combination of virtual and in-person sessions and through written communications. Outreach included participation in town hall sessions, monthly publication of the DNSR Digest, emails to targeted groups of licensees, meetings with associations or working groups, presentations at industry conferences, and the publishing of articles in industry publications. To ensure the DNSR Digest is used to its best advantage (reaching all nuclear substance licensees except for the WNSLs), in February 2024 a survey was

sent to licensees to measure licensee interest in the Digest and to seek input on articles that may be of interest. Licensees that responded to the survey were generally satisfied with the frequency and format of the Digest. Many took the opportunity to provide suggestions for future issues. Appendix K includes a complete list of outreach and engagement activities undertaken in 2023.

In addition to these outreach and engagement opportunities, after the presentation of the 2022 ROR on the use of nuclear substances in November 2023, CNSC staff reached out to the 4 interested parties who took the opportunity to comment on the ROR through the intervention process: Canadian Environmental Law Association, Nuclear Transparency Project, Canadian Nuclear Workers Council and Canadian Radiation Protection Association. For each intervention, staff created a table of comments and recommendations related to the ROR and responded to each one individually. Staff then shared the relevant responses with each intervenor and offered to meet with the stakeholders to discuss the responses if needed. At the time of writing this report, none of the intervenors had requested a specific meeting with CNSC staff. Appendix L summarizes the number of comments responded to and the number of comments by area of interest submitted by the intervenors. In response to feedback from intervenors regarding sharing the dispositioning of intervenor comments more widely, starting with this ROR, CNSC staff will post responses to intervenor comments on the Open Government website along with the actual ROR.

Staff are committed to continued openness and transparency with licensees and all other interested parties.

9.3 Participant Funding Program

The CNSC established the Participant Funding Program (PFP) in 2011 to:

1. enhance individual, not-for-profit organization and Indigenous Nations and Communities participation in the CNSC's environmental assessment (EA) and licensing processes for major nuclear facilities (e.g., uranium mines, nuclear power plants, nuclear substance processing, or nuclear waste facilities)
2. assist individuals, not-for-profit organizations and Indigenous Nations and Communities to bring value-added information to the Commission through informed and topic-specific interventions related to EAs and licensing (i.e., new, distinctive and relevant information that contributes to a better understanding of the anticipated effects of a project)

Participant funding was issued to 4 intervenors to provide interventions on the 2023 ROR. The maximum amount of available funding to each is as follows:

- Radiation Safety institute of Canada ($4,125)

- Manitoba Métis Federation ($4,400)
- Nuclear Transparency Project ($4,250)
- Kebaowek First Nation ($4,400)

10 Other matters of regulatory interest

10.1 Safeguards

The Government of Canada has obligations on the peaceful use of nuclear energy pursuant to the *Treaty on the Non-proliferation of Nuclear Weapons.* CNSC requirements for nuclear substance licensees relating to Canada's international obligations are defined in the applicable regulations and licences.

Safeguards involve a system of inspection and other verification activities undertaken by the International Atomic Energy Agency (IAEA) to evaluate Canada's compliance with its obligations under its safeguards agreements with the IAEA. The objective of the Canada–IAEA safeguards agreements is for the IAEA to provide assurance to Canada and to the international community that all declared nuclear materials are being used for peaceful, non-explosive purposes and that there is no indication of undeclared nuclear materials or activities. The CNSC has published REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*, which sets out the requirements and guidance for the establishment and maintenance of a safeguards program. Safeguarded materials include uranium, thorium and plutonium 239. Generally, among the licensees covered in this report, this material can be present as samples, check sources and shielding, among other forms. Licensees subject to safeguards have a condition included in their licence, and the CNSC continues to engage with licensees to ensure that all nuclear material subject to safeguards is reported to the IAEA.

In 2023, the IAEA performed 7 inspections at the facilities of nuclear substance licensees to confirm licensees' declarations on the possession and use of nuclear material. The IAEA reported that the results of these inspections were all satisfactory and no areas for improvement were identified.

CNSC staff have been working on improving safeguards reporting on small quantities of nuclear material used at research institutions and at industrial locations. The CNSC's Location Outside Facilities (LOFs) creation initiative, which aimed to build awareness with licensees and a commitment to reporting of small quantities, is now complete and the IAEA was informed of this in early 2024. Staff will continue to monitor for any new LOFs.

Finally, CNSC staff will continue to ensure that licensees implement all the measures required to meet Canada's international obligations.

10.2 International Commitments and Requirements

Canada has committed to the implementation of various IAEA codes, standards and guidance documents. For example, as part of Canada's commitment to the IAEA *Code of Conduct on the Safety and Security of Radioactive Sources* and the associated *Guidance on the Import and Export of Radioactive Sources*, nuclear substance licensees with Category 1 and/or 2 (high-risk) sealed sources must inform the CNSC of any transfer, receipt, export or import of those sources. Licensees report their high-risk sealed sources inventory through the Sealed Source Tracking System (SSTS). The SSTS is a secure information management system that tracks new and existing high-risk sources within Canada. It populates the National Sealed Source Registry so that the information is as current as licensee reporting allows. Licensees subject to this requirement have the relevant licence condition included in their licence, and compliance with this condition is verified through a regulatory inspection. Canada has also committed to the IAEA's *Guidance on the Management of Disused Radioactive Sources*, which is supplementary guidance to the Code of Conduct and is intended to consolidate and provide details on the management of disused sources. Every 3 years, Canada must present a report on the implementation of the Code and its supplementary guidance at a meeting of IAEA member states. The most recent report covered the period from January 2019 to December 2022 and was presented at the 2023 IAEA Code of Conduct meeting.

Nuclear substance licensees who import or export nuclear substances are subject to licence conditions that limit the types and amounts of nuclear substances that they can import or export without a separate, valid import/export licence. Licensees must meet the requirements set out in the *Nuclear Non-proliferation Import and Export Control Regulations*. In addition, REGDOC-2.13.2, *Import and Export*, sets out guidance for current and prospective licensees who intend to import or export risk-significant radioactive sources (Categories 1 and 2 radioactive sources). Compliance with import and export restrictions is verified during inspections.

In addition, the CNSC considers international regulations and standards when developing domestic regulations. For example, the *Packaging and Transport of Nuclear Substances Regulations, 2015*, with which all licensees and non-licensees must comply, incorporate by reference the IAEA *Regulations for the Safe Transport of Radioactive Material*. While this is the only case where the IAEA regulations are referenced directly in the domestic regulations, current CNSC regulations that apply to licensees covered by this report are generally based on international regulations and standards, including relevant safety standards and other IAEA publications.

In 2019, Canada was the subject of an IAEA Integrated Regulatory Review Service (IRRS) mission, the main purpose of which was to perform a peer review of Canada's regulatory framework for nuclear and radiation safety against IAEA safety standards, which are the

international benchmark for safety. Based on this review, Canada was found to have a comprehensive and robust regulatory framework for nuclear and radiation safety covering current facilities and activities, including those covered by this regulatory oversight report. While not explicitly referenced, IAEA safety standards are translated into regulatory requirements or licence conditions for licensees covered in this report.

A list of applicable international regulations and standards are included in appendix M.

11 Conclusions

In 2023, most inspected licensees were compliant with regulatory requirements and achieved satisfactory ratings in the SCAs reported on in this report. Licensing and certification activities continued to play a critical role in ensuring that effective licensee programs were in place, and these programs contributed significantly to overall licensee performance. Where compliance did not meet expectations, licensees implemented appropriate corrective actions. All 12 enforcement actions issued in 2023 have been closed. Radiation exposure to workers continued to be very low and was consistent with previous years. When events did occur, licensees took appropriate measures to address the events and took steps to prevent recurrence. Staff continue to address the backlog of inspections and will continue to monitor for possible negative trends in compliance over the coming years.

The evaluations of the SCA findings, resulting from the CNSC's comprehensive regulatory oversight of the industry, demonstrate that licensees made acceptable provisions to protect health, safety, security and the environment from the use of nuclear substances and prescribed equipment, and implemented the measures required to meet Canada's international obligations. Based on these evaluations, CNSC staff conclude that the use of nuclear substances and prescribed equipment in Canada remains safe and secure.

12 Glossary

For definitions of terms used in this document, see REGDOC-3.6, *Glossary of CNSC Terminology*, which includes terms and definitions used in the *Nuclear Safety and Control Act* and the Regulations made under it, and in CNSC regulatory documents and other publications.

Appendix A: Licensed activities covered in this report

Licensed activities covered in this report are extremely varied and, for ease of reporting, have been divided into 4 sectors: medical, industrial, academic and research, and commercial. Each of these sectors is described briefly below.

A1: Medical

Licensees in the medical sector use nuclear substances and operate accelerators and other equipment for diagnostic and therapeutic purposes in hospitals and medical clinics. Medical applications using radiopharmaceuticals are designed to target specific tissues and organs, allowing for the delivery of nuclear substances to specific areas of the body for diagnostic testing or treatment.

Diagnostic nuclear medicine studies assist in the diagnosis of medical conditions based on the physiological functions of organs, tissues or bones. Radiopharmaceuticals containing nuclear substances such as technetium-99m, gallium-67 and fluorine-18 are administered to patients for imaging purposes. Examples of common nuclear medicine diagnostic procedures include cardiac scans (to visualize heart function and blood flow), bone scans (to evaluate bone metabolism, infection or tumours) and renal scans (to evaluate kidney function).

Radioisotopes are also used in many therapeutic procedures. For example, iodine-131 is used to treat diseases of the thyroid gland, while other isotopes, such as yttrium-90, may be used in conjunction with antibodies for site-specific treatment of certain cancers.

Radiation therapy devices are used to treat cancer, either via an external beam of radiation or by placing radioactive sources inside cancerous tissues. Medical linear accelerators are the most common type of equipment used for therapeutic purposes. These devices are used to treat cancer by delivering carefully controlled doses of radiation to cancerous tissue.

Veterinary nuclear medicine uses techniques like those employed in human nuclear medicine. Veterinary clinics across the country offer a wide range of diagnostic and therapeutic nuclear medicine procedures and, in some cases, radiation therapy treatment using medical accelerators or teletherapy.

A2: Industrial

Licensees in the industrial sector use nuclear substances either in industrial facilities or as part of fieldwork or construction. Typical applications include the measurement of physical parameters such as density, moisture content and geological composition in civil engineering. Nuclear substances are also used for material examination in civil engineering, and for level and flow rate measurements in industrial processes (such as oil and gas exploration, mining and manufacturing). They are found in radiation devices such as fixed nuclear gauges, which monitor production processes in many industries, and portable nuclear gauges, which are often used to measure moisture and density in soil and the compaction of asphalt in road construction.

In industrial radiography, nuclear substances are used in exposure devices for the non-destructive examination of materials. Anyone operating an exposure device or supervising a trainee in the operation of such device must be certified by the CNSC. Exposure devices used for industrial radiography are engineered and operated using multiple safety barriers to reduce the potential for accidental occupational exposure. One example is dense material, such as depleted uranium, which shields people against the intense radioactivity of the source contained inside the device.

Industrial applications of nuclear substances are as varied as the processes to which they are applied. Specific radioisotopes are chosen based on the type of radiation they emit, the intensity of their radiation and the intended application. For example, the nuclear substance chosen for industrial radiography depends on the size and density of the material to be imaged. Cobalt-60, with its high energy gamma radiation, is used for large structures and dense materials such as structural concrete. When the material does not require the penetrating power of cobalt-60, other nuclear substances, such as iridium-192 or selenium 75, are used instead. Cesium-137, another gamma emitter, is most commonly used in portable and fixed gauges to measure density. In other industrial uses, like measuring moisture content for example, portable gauges most commonly use neutron emitting nuclear substances such as americium 241/beryllium.

A3: Academic and research

Licensed activities in the academic and research sector are conducted in universities, colleges and research laboratories, and focus mainly on biological and biomedical research that primarily uses open (unsealed) nuclear substances. This sector also uses sealed sources, radiation devices and accelerators for teaching and for pure and applied research, as well as irradiators to irradiate cells or samples in laboratories.

Academic and research facilities may be authorized to use any nuclear substance that they request be added to their licence. These may include unsealed nuclear substances, sealed sources, radiation devices and class II prescribed equipment. It is not unusual for an academic and research licensee to have dozens of nuclear substances listed on their licence.

A4: Commercial

Licensed activities in the commercial sector involve the production, processing, storage and distribution of nuclear substances, the calibration of radiation detection instruments, and the servicing of radiation devices and Class II prescribed equipment for commercial purposes. Waste nuclear substance licences also fall under the commercial sector.

In the commercial sector the range of nuclear substances authorized for use is large and varies depending on the activity. Most of the nuclear substance processing licences would involve the use of medical isotopes (e.g., Tc-99m, I-131, F-18, Tl-201, In-111, I-125….) whereas the servicing licences would generally include sealed sources, radiation devices, and/or class II prescribed equipment depending on what they are permitted to service. Again, the list of nuclear substances in each of these pieces of equipment varies greatly. Some of these licensees will have only a few items they are licensed to service while others will have dozens. Distribution licences again could include anything depending on what they are licensed to distribute—this could include sealed sources, unsealed sources or prescribed equipment. Calibration licences authorize the use of sealed sources or prescribed equipment—some of the most common calibrators contain Cs-137.

Additional information about the licensed activities covered by this report can also be found in a technical briefing to the Commission on nuclear substances in Canada (CMD 18-M49) and on the CNSC website, which also includes various resources geared towards licensees.

Appendix B: Regulatory program for the use of nuclear substances

This appendix presents additional regulatory data to complement the information provided in the main part of the document.

B1: Designated officer decisions

CNSC designated officers made a total of 2,023 licensing and certification decisions related to activities covered in this report in 2023. The majority of these were licensing decisions, as shown in table 1. There was no significant change in the number or type of decisions made compared to 2022.

Table 1: Designated officer licensing and certification decisions in 2023, all sectors combined

Type of decision	Number of decisions
Licensing (issuance of new licences, licence renewals, licence amendments, licence revocations and licence transfers)	1,424
Certification of prescribed equipment (radiation devices, Class II prescribed equipment, and transport packages)	102
Certification of exposure device operators (issuance of new certifications and renewal of certifications)	477
Certification of Class II radiation safety officers	20
Total	**2,023**

The CNSC's risk-informed regulatory program applies resources and regulatory oversight commensurate with the risk associated with the regulated activity. Regulatory effort related to licensing, certification and compliance verification is derived from this program.

B2: Licensing

In 2023, there were 2,005 nuclear substances and prescribed equipment licences held by 1,411 licensees across Canada, as shown in figure 3. An additional 53 licences were held by companies headquartered in other countries (primarily the United States). Many of these of

these licensees service prescribed equipment located in Canada, while others have operational facilities in Canada.

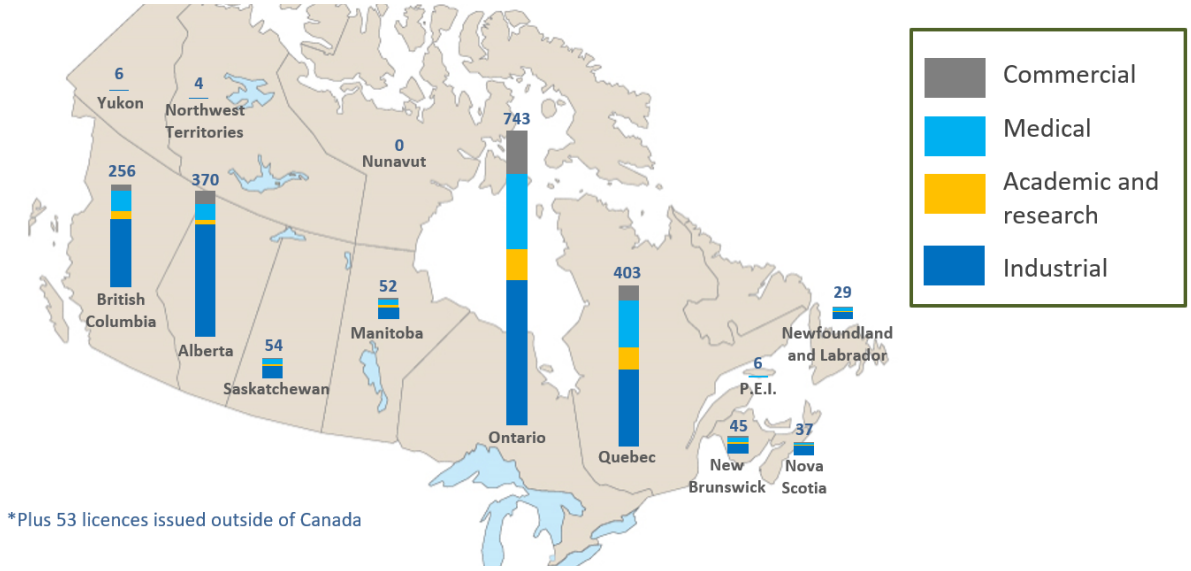
The disparity between the number of licences and the number of licensees can be explained by the fact that while most licensees perform a single licensed activity and therefore require only one CNSC licence, others perform varied activities that require a licence for each one. For example, a hospital may have multiple licences to cover radiation therapy facilities, diagnostic nuclear medicine, therapeutic nuclear medicine, nuclear substance processing, and research labs, each of which is covered by its own licence given the unique requirements and programs. CNSC staff work with these licensees to ensure that an appropriate level of regulatory control is maintained, while minimizing administrative burden wherever possible.

An overview of the licensing process is available in section 2 of this ROR.

Table 2: Number of licences by sector, 2019 to 2023

Sector	2019	2020	2021	2022	2023
Medical	438	445	440	443	449
Industrial	1,228	1,207	1,221	1,205	1,180
Academic and research	187	189	187	185	185
Commercial	237	238	249	247	244
Total	**2,090**	**2,079**	**2,097**	**2,080**	**2,058**

Figure 3: Licence distribution



B3: Certification of prescribed equipment

Certification of prescribed equipment confirms that the equipment is safe to use; that adequate measures are in place to protect the environment, the health, safety and security of persons, and national security; and that the design meets international requirements. Prescribed equipment includes radiation devices, Class II prescribed equipment, and transport packages, and the requirements for certification are set out in the regulations. As seen in table 1, designated officers made 102 decisions related to the certification of prescribed equipment in 2023 compared to 69 in 2022. This variation is normal year-to-year as the number of certificates that expire, and the number of new applications vary each year.

As in the case of licensing, CNSC staff perform risk-informed technical assessments of certification applications submitted to the CNSC. The CNSC has regulatory documents in place to ensure that its expectations for applicants are clear. Service standards for the certification of Class II prescribed equipment, radiation devices, and transport packages are posted on the CNSC website. The lists of certified transport packages and special form radioactive material, Class II prescribed equipment and radiation devices are available on the CNSC website. In November 2022, staff presented the certification process for prescribed equipment to the Commission.

B4: Certification of exposure device operators

Licensees are required under the *Nuclear Substances and Radiation Devices Regulations* to permit only CNSC-certified personnel and supervised trainees to use exposure devices containing nuclear substances. In 2023, the CNSC certified 125 new exposure device operators (EDOs) and renewed the certifications of 352 others, compared to 2022 when the CNSC certified 69 new EDOs and renewed 269 certifications. In addition, 2 certificates were replaced in 2023. Certification staff met with industry twice in 2023-first at the industrial radiography annual meeting in the spring of 2023 and then at the scheme committee meeting in the fall of 2023.

CSA Group's *CSA PCP-09: Exposure Device Operator Personnel Certification Guide*, provides guidance on the recommended procedures to achieve and renew an EDO personnel certification. Additional information on the EDO program can be found on the CNSC website.

B5: Certification of Class II radiation safety officers

All licensees that operate Class II nuclear facilities or that service Class II prescribed equipment must have a certified radiation safety officer (RSO) and a qualified temporary replacement. The RSO ensures that licensed activities are conducted safely and that all regulatory requirements are met.

In 2023, the CNSC certified 20 Class II RSOs which is the same as in 2022. As in 2022, no Class II RSOs were decertified in 2023.

In 2022, the CNSC published discussion paper DIS-22-01, *Proposal to Amend the Class II Nuclear Facilities and Prescribed Equipment Regulations*, which included proposed revisions to the Regulations. In response to this discussion paper and associated outreach sessions, external stakeholders submitted over 200 comments to the CNSC. These comments were reviewed and dispositioned by CNSC staff, and a "What We Heard Report" will be published in the spring of 2024.

Appendix C: Inspections conducted in 2023

The following table provides a list of all inspections performed on licences covered by this report in 2023. An overview of inspections in 2023 can be found in section 3 of this report.

Table 3: List of all inspections performed on licences by sector in 2023

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-01-05	MDG Contracting Services Inc.	Sparwood	BC	Industrial	Fixed Gauge
2023-01-09	Lascelles Engineering and Associates Ltd.	Hawkesbury	ON	Industrial	Portable Gauge
2023-01-10	Brechelle Holdings Ltd.	Cranbrook	BC	Industrial	Portable Gauge
2023-01-10	Sunnybrook Health Sciences Centre	Toronto	ON	Medical	Other medical
2023-01-10	Interior Health Authority	Cranbrook	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-10	Interior Health Authority	Cranbrook	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-10	Klohn Crippen Berger Ltd.	Calgary	AB	Industrial	Portable Gauge
2023-01-10	Sunnybrook Health Sciences Centre	Toronto	ON	Academic and research	Lab studies and consolidated use
2023-01-10	Rapiscan Systems Inc.	Mississauga	ON	Commercial	Servicing
2023-01-10	Ottawa Heart Imaging Inc.	Ottawa	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-11	Artech Consulting Ltd.	Cranbrook	BC	Industrial	Portable Gauge
2023-01-11	Teck Metals Ltd.	Kimberley	BC	Industrial	Fixed Gauge
2023-01-11	Health Canada	Ottawa	ON	Academic and research	Lab studies and consolidated use
2023-01-11	Health Canada	Ottawa	ON	Academic and research	Lab studies and consolidated use
2023-01-12	LRL Associates Ltd.	Ottawa	ON	Industrial	Portable Gauge
2023-01-12	Skookumchuck Pulp Inc.	Shookumchuck	BC	Industrial	Fixed Gauge
2023-01-12	GHD Consultants Ltd.	Nepean	ON	Industrial	Portable Gauge
2023-01-12	Max Helmer Construction Ltd.	Invermere	BC	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-01-12	Horizon Testing Inc.	Prince George	BC	Industrial	Industrial Radiography
2023-01-13	Centre intégré de santé et de services sociaux de l'Abitibi-Témiscamingue	Val d'Or	QC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-16	Énergie Valero Inc.	Lévis	QC	Industrial	Fixed Gauge
2023-01-17	University Health Network	Toronto	ON	Academic and research	Lab studies and consolidated use
2023-01-17	University Health Network	Toronto	ON	Academic and research	Lab studies and consolidated use
2023-01-17	Coulombe Québec Limitée	Québec	QC	Industrial	Fixed Gauge
2023-01-17	Nvira Environnement Inc.	Québec	QC	Industrial	Portable Gauge
2023-01-18	CHU de Québec - Université Laval	Ste-Foy	QC	Academic and research	Lab studies and consolidated use
2023-01-18	CHU de Québec - Université Laval	Québec	QC	Academic and research	Lab studies and consolidated use
2023-01-19	CHU de Québec - Université Laval	Québec	QC	Academic and research	Lab studies and consolidated use
2023-01-19	CHU de Québec - Université Laval	Québec	QC	Academic and research	Lab studies and consolidated use
2023-01-19	CHU de Québec - Université Laval	Québec	QC	Academic and research	Lab studies and consolidated use
2023-01-19	Dr. David Lautner	Calgary	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-19	Dr. David Lautner	Calgary	AB	Commercial	Processing of Nuclear substances
2023-01-23	University of British Columbia	Vancouver	BC	Academic and research	Lab studies and consolidated use
2023-01-23	University of British Columbia	Vancouver	BC	Academic and research	Lab studies and consolidated use
2023-01-23	Thurber Engineering Ltd.	Victoria	BC	Industrial	Portable Gauge
2023-01-23	Agnico-Eagle Mines Ltd.	Meadowbank	NU	Industrial	Fixed Gauge
2023-01-23	The Cobalt Refinery Company Inc.	Fort Saskatchewan	AB	Industrial	Fixed Gauge
2023-01-23	Centre intégré de santé et de services sociaux de l'Abitibi-Témiscaminque	Val d'Or	QC	Medical	Diagnostic and therapeutic nuclear medicine

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-01-23	Metro Testing & Engineering Ltd.	Victoria	BC	Industrial	Portable Gauge
2023-01-24	Alberta Health Services	Edmonton	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-24	Alberta Health Services	Edmonton	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-24	Clifton Engineering Group Inc.	Edmonton	AB	Industrial	Portable Gauge
2023-01-24	Les Laboratoires d'Essais Mequaltech Inc.	Bécancour	QC	Industrial	Industrial Radiography
2023-01-24	North West Nuclear Medicine for Animals Inc.	Vancouver	BC	Medical	Vet. Nuclear medicine
2023-01-24	Vancouver Island Health Authority	Victoria	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-24	Vancouver Island Health Authority	Victoria	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-24	Provincial Health Services Authority	Vancouver	BC	Medical	Other medical
2023-01-24	Fisheries and Oceans Canada	Sidney	BC	Academic and research	Lab studies and consolidated use
2023-01-24	Thomas Bellemare Ltée.	Trois-Rivières	QC	Industrial	Portable Gauge
2023-01-25	University of Alberta	Edmonton	AB	Academic and research	Lab studies and consolidated use
2023-01-25	University of Alberta	Edmonton	AB	Academic and research	Lab studies and consolidated use
2023-01-25	University of Alberta	Edmonton	AB	Academic and research	Lab studies and consolidated use
2023-01-25	University of Alberta	Edmonton	AB	Academic and research	Lab studies and consolidated use
2023-01-25	RTD Quality Services Inc.	Victoria	BC	Industrial	Industrial Radiography
2023-01-25	Vancouver Island Health Authority	Victoria	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-25	GeoPacific Consultants Ltd.	Victoria	BC	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-01-25	Acuren Inc.	Burnaby	BC	Industrial	Industrial Radiography
2023-01-25	Centre intégré universitaire de santé et de services sociaux de la Mauricie-et-du-Centre-du-Québec	Shawinigan-Sud	QC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-25	Centre intégré universitaire de santé et de services sociaux de la Mauricie-et-du-Centre-du-Québec	Shawinigan-Sud	QC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-25	Vancouver Coastal Health Authority	Richmond	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-25	Vancouver Coastal Health Authority	Richmond	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-26	Amgen British Columbia Inc.	Burnaby	BC	Medical	Other medical
2023-01-26	Vancouver Island Health Authority	Victoria	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-26	Coanda Research and Development Corporation	Edmonton	AB	Industrial	Fixed Gauge
2023-01-26	Canada Pump and Power (CPP) Corporation	Ardrossan	AB	Industrial	Fixed Gauge
2023-01-26	Cordax Evaluation Technologies Inc.	Calgary	AB	Industrial	Oil well Logging
2023-01-26	Provincial Health Services Authority	Victoria	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-26	Vancouver Coastal Health Authority	North Vancouver	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-26	Vancouver Coastal Health Authority	North Vancouver	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-27	Mackenzie Health	Richmond Hill	ON	Medical	Diagnostic and therapeutic nuclear medicine

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-01-27	Mackenzie Health	Richmond Hill	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-27	Tracerco Radioactive Diagnostic Services Canada, Inc.	Edmonton	AB	Commercial	Servicing
2023-01-27	Graymar Equipment (2008) Inc.	Delta	BC	Industrial	Fixed Gauge
2023-01-31	McGill University	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-01-31	McGill University	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-01-31	Northern Health Authority	Fort St. John	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-31	Northern Health Authority	Fort St. John	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-01-31	Nortech Advanced N.D.T. Ltd.	Fort St. John	BC	Industrial	Industrial Radiography
2023-01-31	Nortech Advanced N.D.T. Ltd.	Fort St. John	BC	Industrial	Industrial Radiography
2023-01-31	Inteplast Bags and Films Corporation	Vaughan	ON	Industrial	Fixed Gauge
2023-01-31	Fisher Environmental Ltd.	Markham	ON	Industrial	Portable Gauge
2023-01-31	OGS Associates Inc.	Toronto	ON	Industrial	Portable Gauge
2023-02-01	St. Thomas Elgin General Hospital	St. Thomas	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-02-01	St. Thomas Elgin General Hospital	St. Thomas	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-02-01	Brocor Construction Ltd.	Dawson Creek	BC	Industrial	Portable Gauge
2023-02-01	Buffalo Inspection Services (2005) Inc.	Fort St. John	BC	Industrial	Industrial Radiography
2023-02-01	Tryon Engineering Incorporated	Dawson Creek	BC	Industrial	Portable Gauge
2023-02-02	DWB Consulting Services Ltd.	Fort St. John	BC	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-02-02	Deka Inspection Services Ltd.	Charlie Lake	BC	Industrial	Industrial Radiography
2023-02-03	Atomic Inspection Services Ltd.	Fort St. John	BC	Industrial	Industrial Radiography
2023-02-03	Acciona Infrastructure Canada Inc.	Fort St. John	BC	Industrial	Portable Gauge
2023-02-03	Consor Engineers, LLC	Dorion-Vaudreuil	ON	Industrial	Portable Gauge
2023-02-03	Consor Engineers, LLC	Orillia	ON	Industrial	Portable Gauge
2023-02-07	Université de Montréal	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-02-07	Université de Montréal	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-02-07	Université de Montréal	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-02-07	Taghleef Industries Canada Inc.	Varennes	QC	Industrial	Fixed Gauge
2023-02-07	Di-Med Services Limited	Vaughan	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-02-08	Paraza Pharma Inc.	Laval	QC	Academic and research	Lab studies and consolidated use
2023-02-09	Genfir Inc.	Thorold	ON	Industrial	Portable Gauge
2023-02-09	Ventus Therapeutics Inc.	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-02-09	Niagara Testing and Inspection Ltd.	Thorold	ON	Industrial	Portable Gauge
2023-02-09	Compass Minerals Wynyard Inc.	Wynyard	SK	Industrial	Fixed Gauge
2023-02-13	Patriot Engineering Ltd.	Toronto	ON	Industrial	Portable Gauge
2023-02-13	Big Guns Energy Services Inc.	Red Deer	AB	Industrial	Oil well Logging
2023-02-13	Hartstone Inc.	Olds	AB	Industrial	Portable Gauge
2023-02-13	Hecla Quebec Inc.	Baie James	QC	Industrial	Fixed Gauge
2023-02-14	Carmeuse Lime (Canada) Limited	Ingersoll	ON	Industrial	Fixed Gauge
2023-02-14	CGC Acquisition Corporation	Red Deer County	AB	Industrial	Oil well Logging

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-02-14	Industrial Radiography Supplies & Services Inc.	Burlington	ON	Commercial	Servicing
2023-02-14	Industrial Radiography Supplies & Services Inc.	Burlington	ON	Commercial	Distribution
2023-02-14	Industrial Radiography Supplies & Services Inc.	Burlington	ON	Commercial	Calibration
2023-02-15	Centre hospitalier universitaire Sainte-Justine	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-02-15	Perfection Inspection Limited	Cambridge	ON	Industrial	Industrial Radiography
2023-02-15	Unique Detection Services Limited	Cambridge	ON	Industrial	Industrial Radiography
2023-02-15	Domtar Inc.	Windsor	QC	Industrial	Fixed Gauge
2023-02-15	Keyera Corp.	Edmonton	AB	Industrial	Fixed Gauge
2023-02-15	North West Redwater Holdings Corp.	Gibbons	AB	Industrial	Fixed Gauge
2023-02-16	Steel Inspection & Testing Ltd.	St Catharines	ON	Industrial	Industrial Radiography
2023-02-16	Insight Medical Holdings Ltd.	Spruce Grove	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-02-16	Medical Imaging Consultants	Edmonton	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-02-17	BWXT Canada LTD.	Cambridge	ON	Industrial	Industrial Radiography
2023-02-17	Goldcorp Canada Ltd.	Rouyn-Noranda	QC	Industrial	Fixed Gauge
2023-02-23	Rambler Metals and Mining Canada Limited	Baie Verte	NL	Industrial	Fixed Gauge
2023-02-27	Orbit Engineering Limited	Brampton	ON	Industrial	Portable Gauge
2023-02-27	PrairieGeo Engineering Ltd.	Calgary	AB	Industrial	Portable Gauge
2023-02-28	Molson Canada GP ULC	St-Hubert	QC	Industrial	Fixed Gauge
2023-02-28	Bot Engineering Ltd.	Campbellville	ON	Commercial	Other commercial
2023-02-28	Hunt Inspection Ltd.	Stettler	AB	Industrial	Industrial Radiography
2023-03-01	NWP Industries General Partner Ltd.	Innisfail	AB	Industrial	Industrial Radiography

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-03-02	Centre intégré de santé et de services sociaux de la Montérégie-Centre	Greenfield Park	QC	Medical	Radiation Therapy
2023-03-03	University of Saskatchewan	Saskatoon	SK	Medical	Vet. Nuclear medicine
2023-03-06	Breton N.D. Testing Incorporated	Fort McMurray	AB	Industrial	Industrial Radiography
2023-03-06	ParklandGEO Ltd.	Fort McMurray	AB	Industrial	Portable Gauge
2023-03-06	Centre intégré de santé et de services sociaux de la Montérégie-Centre	Greenfield Park	QC	Medical	Radiation Therapy
2023-03-07	Couillard Construction Limitée	Coaticook	QC	Industrial	Portable Gauge
2023-03-07	TriQuest Nondestructive Testing Corp.	Fort McMurray	AB	Industrial	Industrial Radiography
2023-03-07	Smucker Foods of Canada Corp.	Sherbrooke	QC	Industrial	Fixed Gauge
2023-03-07	Stantec Consulting Ltd.	Fort Mackay	AB	Industrial	Portable Gauge
2023-03-07	Ultratest N.D.T. Services (2010) Inc.	Fort Mackay	AB	Industrial	Industrial Radiography
2023-03-07	Acuren Inc.	Fort McMurray	AB	Industrial	Industrial Radiography
2023-03-07	Suncor Energy Inc.	Fort McMurray	AB	Industrial	Fixed Gauge
2023-03-08	RTD Quality Services Inc.	Fort McMurray	AB	Industrial	Industrial Radiography
2023-03-08	Terracon Geotechnique Ltd.	Fort McMurray	AB	Industrial	Portable Gauge
2023-03-08	TISI Canada Inc.	Edmonton	AB	Industrial	Industrial Radiography
2023-03-08	TISI Canada Inc.	Fort McMurray	AB	Industrial	Industrial Radiography
2023-03-08	CIUSSS de l'Estrie - CHUS	Sherbrooke	QC	Academic and research	Lab studies and consolidated use
2023-03-08	CEDA General Partners Ltd.	Wood Buffalo	AB	Industrial	Fixed Gauge
2023-03-08	Suncor Energy Inc.	Fort McMurray	AB	Industrial	Portable Gauge
2023-03-08	Glencore Canada Corporation	Katinniq	QC	Industrial	Fixed Gauge
2023-03-09	Thurber Engineering Ltd.	Fort McMurray	AB	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-03-09	Graymont (QC) Inc.	Dudswell	QC	Industrial	Fixed Gauge
2023-03-09	Metalcare Group Inc.	Fort McMurray	AB	Industrial	Portable Gauge
2023-03-09	Metalcare Group Inc.	Fort McMurray	AB	Industrial	Industrial Radiography
2023-03-09	Leidos Inc.	Ottawa	ON	Commercial	Servicing
2023-03-09	Evolution Mining Gold Operations Ltd.	Cochenour	ON	Industrial	Fixed Gauge
2023-03-09	Béton Optimal Inc.	Eastman	QC	Industrial	Portable Gauge
2023-03-10	Stuart Hunt & Associates Ltd.	Mississauga	ON	Commercial	Servicing
2023-03-10	CNOOC Petroleum North America ULC	Anzac	AB	Industrial	Fixed Gauge
2023-03-13	Collège Ahuntsic	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-03-13	Collège Ahuntsic	Montréal	QC	Industrial	Portable Gauge
2023-03-13	Calfrac Well Services Ltd.	Red Deer	AB	Industrial	Fixed Gauge
2023-03-13	Calfrac Well Services Ltd.	Red Deer	AB	Industrial	Fixed Gauge
2023-03-14	Université du Québec à Montréal	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-03-14	Université du Québec à Montréal	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-03-14	Université du Québec à Montréal	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-03-14	Lab Journeaux Inc.	Dorval	QC	Industrial	Portable Gauge
2023-03-14	Hexion Canada Inc.	Edmonton	AB	Industrial	Fixed Gauge
2023-03-14	Peter Kiewit Sons ULC	Westlock	AB	Industrial	Portable Gauge
2023-03-14	Canadian Nuclear Safety Commission	Ottawa	ON	Academic and research	Other academic and research
2023-03-15	McGill University	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-03-15	McGill University	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-03-15	Misericordia Community Hospital	Edmonton	AB	Medical	Diagnostic and therapeutic nuclear medicine

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-03-15	Misericordia Community Hospital	Edmonton	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-03-15	ENC Testing Inc.	Sherwood Park	AB	Industrial	Portable Gauge
2023-03-15	Technocell Inc.	Drummondville	QC	Industrial	Fixed Gauge
2023-03-15	AR Geotechnical Engineering Ltd.	Calgary	AB	Industrial	Portable Gauge
2023-03-15	Pavage Veilleux (1990) Inc.	Notre-Dame du Bon-Conseil	QC	Industrial	Portable Gauge
2023-03-16	Institut de Cardiologie de Montréal	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-03-16	Rio Tinto Fer et Titane inc.	Sorel-Tracy	QC	Industrial	Fixed Gauge
2023-03-16	Rio Tinto Fer et Titane inc.	Sorel-Tracy	QC	Industrial	Fixed Gauge
2023-03-16	WSP Canada Inc.	Sherwood Park	AB	Industrial	Portable Gauge
2023-03-17	c/o BBE Logistics	Cambridge Bay	NU	Industrial	Fixed Gauge
2023-03-20	Eagle Engineering Corp.	Bragg Creek	AB	Industrial	Portable Gauge
2023-03-20	SCP GÉOTEK INC.	Montréal	QC	Industrial	Portable Gauge
2023-03-21	Cascades Canada ULC	Kingsey Falls	QC	Industrial	Fixed Gauge
2023-03-21	Cascades Canada ULC	Kingsey Falls	QC	Industrial	Fixed Gauge
2023-03-21	Cascades Canada ULC	Kingsey Falls	QC	Industrial	Fixed Gauge
2023-03-21	Cascades Sonoco Inc.	Kingsey Falls	QC	Industrial	Fixed Gauge
2023-03-21	Isologic Innovative Radiopharmaceuticals Ltd.	Dorval	QC	Commercial	Processing of Nuclear substances
2023-03-21	Stanley Technical Services Ltd.	Olds	AB	Industrial	Industrial Radiography
2023-03-21	Arcanite Inc.	Oakville	ON	Industrial	Industrial Radiography
2023-03-21	Abraflex (2004) Ltd.	Paisley	ON	Commercial	Waste nuclear substance
2023-03-22	Zinc Electrolytique du Canada Limitée	Salaberry-de-Valleyfield	QC	Industrial	Fixed Gauge
2023-03-22	Department of Radiation and Laser Safety	Ottawa	ON	Commercial	Servicing
2023-03-22	Department of Radiation and Laser Safety	Ottawa	ON	Commercial	Servicing

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-03-22	Department of Radiation and Laser Safety	Ottawa	ON	Commercial	Servicing
2023-03-22	Newcrest Red Chris Mining Limited	Iskut	BC	Industrial	Fixed Gauge
2023-03-22	Newcrest Red Chris Mining Limited	Iskut	BC	Industrial	Portable Gauge
2023-03-23	Cascades Canada ULC	Drummondville	QC	Industrial	Fixed Gauge
2023-03-27	Centre for Addiction and Mental Health	Toronto	ON	Academic and research	Lab studies and consolidated use
2023-03-27	Centre for Addiction and Mental Health	Toronto	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-03-27	Centre for Addiction and Mental Health	Toronto	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-03-27	Oak Valley Health-Markham Stouffville Hospital	Markham	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-03-27	Oak Valley Health-Markham Stouffville Hospital	Markham	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-03-27	Uni-Vert Tech Inc.	Sainte-Marcelline de Kildare	QC	Commercial	Servicing
2023-03-27	Semm Logging Inc.	Sainte-Marcelline de Kildare	QC	Industrial	Oil well Logging
2023-03-27	8109796 Canada Inc.	Fermont	QC	Industrial	Fixed Gauge
2023-03-27	The Pepsi Bottling Group (Canada), ULC	Moncton	NB	Industrial	Fixed Gauge
2023-03-27	Riverview Animal Hospital	Riverview	NB	Medical	Vet. Nuclear medicine
2023-03-28	Toronto East Health Network	Toronto	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-03-28	Toronto East Health Network	Toronto	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-03-28	Port City Inspection Services Ltd.	Saint John	NB	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-03-28	2352767 Ontario Inc.	North York	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-03-28	Diavik Diamond Mines Inc.	Yellowknife	NT	Industrial	Fixed Gauge
2023-03-28	Diavik Diamond Mines Inc.	Yellowknife	NT	Industrial	Portable Gauge
2023-03-28	Acuren Inc.	Fort McMurray	AB	Industrial	Industrial Radiography
2023-03-28	Acuren Inc.	Fort McMurray	AB	Industrial	Industrial Radiography
2023-03-29	Regional Health Authority B	Saint John	NB	Commercial	Calibration
2023-03-29	Regional Health Authority B	Saint John	NB	Medical	Diagnostic and therapeutic nuclear medicine
2023-03-29	Regional Health Authority B	Saint John	NB	Medical	Diagnostic and therapeutic nuclear medicine
2023-03-29	Irving Paper	Saint John	NB	Industrial	Fixed Gauge
2023-03-29	Davroc Testing Laboratories Inc.	Brampton	ON	Industrial	Portable Gauge
2023-03-29	Chemtrade Fort McMurray GP Inc.	Fort McMurray	AB	Industrial	Fixed Gauge
2023-03-29	Tarkett Inc.	Farnham	QC	Industrial	Fixed Gauge
2023-03-29	WSP E & I CANADA LIMITED	Fort McMurray	AB	Industrial	Portable Gauge
2023-03-30	Mount Allison University	Sackville	NB	Academic and research	Lab studies and consolidated use
2023-03-30	Cascades Canada ULC	Lachute	QC	Industrial	Fixed Gauge
2023-03-30	Centre de recherche de l'Hôpital Douglas	Montréal	QC	Academic and research	Lab studies and consolidated use
2023-03-30	Maple Lodge Farms Ltd.	Brampton	ON	Industrial	Fixed Gauge
2023-03-30	Sartrex Power Control Systems Inc.	Concord	ON	Commercial	Other commercial
2023-03-30	Sartrex Power Control Systems Inc.	Concord	ON	Commercial	Calibration
2023-03-30	Sartrex Power Control Systems Inc.	Concord	ON	Commercial	Other commercial
2023-03-30	Petrochina Canada Ltd.	Fort MacKay	AB	Industrial	Fixed Gauge

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2023-03-31	Regional Health Authority B	Moncton	NB	Medical	Diagnostic and therapeutic nuclear medicine
2023-03-31	Regional Health Authority B	Moncton	NB	Medical	Diagnostic and therapeutic nuclear medicine
2023-03-31	Centerline Geomatics Geotechnical Division Ltd.	Fort McMurray	AB	Industrial	Portable Gauge
2023-03-31	Exxonmobil Canada Ltd.	St. John's	NL	Industrial	Fixed Gauge
2023-03-31	Canadian Natural Upgrading Limited	Fort McMurray	AB	Industrial	Fixed Gauge
2023-04-05	BWXT Medical Ltd.	Kanata	ON	Industrial	Other industrial
2023-04-13	TotalCardiology Services Inc.	Calgary	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-04-18	Almadon Holdings Ltd.	Calgary	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-04-19	Johns Manville Canada Inc.	Innisfail	AB	Industrial	Fixed Gauge
2023-04-20	Regional Municipality of Peel	Brampton	ON	Industrial	Portable Gauge
2023-04-20	2021960 Ontario Inc. O/A New Forest Paper Mills LP	Scarborough	ON	Industrial	Fixed Gauge
2023-04-20	Irving Consumer Products Limited	Toronto	ON	Industrial	Fixed Gauge
2023-04-20	Honeywell Limited	Toronto	ON	Commercial	Servicing
2023-04-20	SAFFA Engineering Inc.	Markham	ON	Industrial	Portable Gauge
2023-04-20	Arterra Wines Canada Inc.	Niagara Falls	ON	Industrial	Fixed Gauge
2023-04-21	Mitsubishi Chemical Advanced Materials Composites Canada Inc	Guelph	ON	Industrial	Fixed Gauge
2023-04-21	Alros Products Limited	Toronto	ON	Industrial	Fixed Gauge
2023-04-21	Wakefield Canada Inc.	Toronto	ON	Industrial	Fixed Gauge
2023-04-24	Interlake Acquisition Corporation Limited	St Catharines	ON	Industrial	Fixed Gauge
2023-04-24	3M Canada Company	Brockville	ON	Industrial	Fixed Gauge
2023-04-27	Mevex Corporation	Stittsville	ON	Commercial	Other commercial
2023-05-01	BGC Engineering Inc.	Kamloops	BC	Industrial	Portable Gauge

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2023-05-02	Dawson Construction Limited	Kamloops	BC	Industrial	Portable Gauge
2023-05-02	Dawson Construction Limited	Darfield	BC	Industrial	Portable Gauge
2023-05-02	Telford Geotechnical Ltd.	Kamloops	BC	Industrial	Portable Gauge
2023-05-02	Weatherford Canada Ltd.	Edmonton	AB	Industrial	Oil well Logging
2023-05-02	Centre intégré universitaire de santé et de services sociaux de la Mauricie-et-du-Centre-du-Québec	Trois-Rivières	QC	Medical	Radiation Therapy
2023-05-03	Royal Inland Hospital	Kamloops	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-05-03	Royal Inland Hospital	Kamloops	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-05-03	Recon Petrotechnologies Ltd.	Edmonton	AB	Industrial	Oil well Logging
2023-05-03	Allnorth Consultants Limited	Kamloops	BC	Industrial	Portable Gauge
2023-05-03	Rivest Technologies Incorporated	Edmonton	AB	Industrial	Industrial Radiography
2023-05-03	2539393 Ontario Inc.	Mississauga	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-05-03	Centre for Addiction and Mental Health	Toronto	ON	Commercial	Isotope production Acc.
2023-05-04	Klohn Crippen Berger Ltd.	Logan Lake	BC	Industrial	Portable Gauge
2023-05-04	Cantex-Okanagan Construction Ltd.	Kamloops	BC	Industrial	Portable Gauge
2023-05-04	KRUGER KAMLOOPS PULP GP INC	Kamloops	BC	Industrial	Fixed Gauge
2023-05-05	Acuren Inc.	Armstrong	BC	Industrial	Industrial Radiography
2023-05-05	Atlantic Packaging Products Ltd.	Whitby	ON	Industrial	Fixed Gauge
2023-05-05	General Dynamics Ordnance and Tactical Systems - Canada Inc.	Repentingny	QC	Industrial	Other industrial

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-05-05	Centre intégré universitaire de santé et de services sociaux de l'Est-de-l'Île-de-Montréal	Montreal	QC	Medical	Radiation Therapy
2023-05-10	Laurentis Energy Partners Inc.	Hamilton	ON	Academic and research	Lab studies and consolidated use
2023-05-11	Haddad Geotechnical Inc.	Markham	ON	Industrial	Portable Gauge
2023-05-11	LEA Consulting Ltd.	Markham	ON	Industrial	Portable Gauge
2023-05-11	EXP Services Inc.	Markham	ON	Industrial	Portable Gauge
2023-05-15	Industrial Radiography Supplies & Services Inc.	Edmonton	AB	Commercial	Servicing
2023-05-15	Industrial Radiography Supplies & Services Inc.	Edmonton	AB	Commercial	Distribution
2023-05-15	Stantec Consulting Ltd.	Markham	ON	Industrial	Portable Gauge
2023-05-15	Acuren Inc.	Nanaimo	BC	Industrial	Industrial Radiography
2023-05-15	AllRock Consulting Limited	St. John's	NL	Industrial	Portable Gauge
2023-05-16	Medical Imaging Consultants	Edmonton	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-05-16	Baker Hughes Canada Company	Leduc	AB	Industrial	Oil well Logging
2023-05-16	Nyrstar Myra Falls Inc.	Campbell River	BC	Industrial	Fixed Gauge
2023-05-16	Suncor Energy Inc.	St. John's	NL	Industrial	Fixed Gauge
2023-05-16	Suncor Energy Inc.	Mount Pearl	NL	Industrial	Fixed Gauge
2023-05-17	University of Victoria	Victoria	BC	Academic and research	Lab studies and consolidated use
2023-05-17	University of Victoria	Victoria	BC	Academic and research	Lab studies and consolidated use
2023-05-17	University of Victoria	Victoria	BC	Academic and research	Lab studies and consolidated use
2023-05-17	University of Victoria	Victoria	BC	Academic and research	Lab studies and consolidated use
2023-05-17	RadTag Technologies Inc.	Edmonton	AB	Medical	Other medical
2023-05-17	Pangeos Inc.	Laval	QC	Industrial	Portable Gauge
2023-05-17	Terrapex Environmental Ltd.	Toronto	ON	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-05-17	Terrapex Environmental Ltd.	Toronto	ON	Industrial	Portable Gauge
2023-05-17	Schlumberger Canada Limited	Mount Pearl	NL	Industrial	Oil well Logging
2023-05-17	Schlumberger Canada Limited	Mount Pearl	NL	Industrial	Oil well Logging
2023-05-18	Nanaimo Forest Products Ltd.	Nanaimo	BC	Industrial	Fixed Gauge
2023-05-18	Custom Fabricators & Machinists Limited	Mount Pearl	NL	Industrial	Industrial Radiography
2023-05-18	Stantec Consulting Ltd.	St.John's	NL	Industrial	Portable Gauge
2023-05-18	Centre intégré de santé et de services sociaux de la Montérégie-Centre	Greenfield Park	QC	Medical	Diagnostic and therapeutic nuclear medicine
2023-05-18	Centre intégré de santé et de services sociaux de la Montérégie-Centre	Greenfield Park	QC	Medical	Diagnostic and therapeutic nuclear medicine
2023-05-18	Worley Canada Services Ltd.	Calgary	AB	Industrial	Portable Gauge
2023-05-19	Groupe ABS Inc.	Montréal	QC	Industrial	Portable Gauge
2023-05-19	EXP Services Inc.	Mount Pearl	NL	Industrial	Portable Gauge
2023-05-23	Vibac Canada Inc.	Montréal	QC	Industrial	Fixed Gauge
2023-05-23	Les Inspections Thermetco Inc.	Montréal	QC	Industrial	Industrial Radiography
2023-05-24	Centre de santé et de services sociaux du sud-ouest-Verdun	Verdun	QC	Medical	Diagnostic and therapeutic nuclear medicine
2023-05-24	Centre de santé et de services sociaux du sud-ouest-Verdun	Verdun	QC	Medical	Diagnostic and therapeutic nuclear medicine
2023-05-24	Thermo Fisher Scientific (Mississauga) Inc.	Mississauga	ON	Commercial	Servicing
2023-05-25	Associate Veterinary Clinics (1981) Ltd.	Calgary	AB	Medical	Vet. Nuclear medicine
2023-05-26	Soil Engineers Ltd.	Mississauga	ON	Industrial	Portable Gauge
2023-05-26	Engtec Consulting Inc.	Mississauga	ON	Industrial	Portable Gauge
2023-05-29	EXP Services Inc.	Ottawa	ON	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-05-29	Morrison Hershfield Limited	Ottawa	ON	Industrial	Portable Gauge
2023-05-30	Thomas Cavanagh Construction Limited	Stittsville	ON	Industrial	Portable Gauge
2023-05-30	Scapa Tapes North America ULC.	Renfrew	ON	Industrial	Fixed Gauge
2023-05-31	Canada Border Services Agency	Nepean	ON	Academic and research	Other academic and research
2023-05-31	Kollaard Associates Inc.	Kemptville	ON	Industrial	Portable Gauge
2023-05-31	Gemtec Consulting Engineers and Scientists Limited	Ottawa	ON	Industrial	Portable Gauge
2023-06-01	Carleton University	Ottawa	ON	Academic and research	Lab studies and consolidated use
2023-06-01	Carleton University	Ottawa	ON	Academic and research	Lab studies and consolidated use
2023-06-01	Carleton University	Ottawa	ON	Academic and research	Lab studies and consolidated use
2023-06-01	Carleton University	Ottawa	ON	Academic and research	Lab studies and consolidated use
2023-06-01	C.B. Non-Destructive Testing Ltd	Oakville	ON	Industrial	Industrial Radiography
2023-06-02	7518218 Canada inc.	Gatineau	QC	Industrial	Portable Gauge
2023-06-05	Eng-Tech Consulting Limited	Winnipeg	MB	Industrial	Portable Gauge
2023-06-05	Trek Geotechnical Inc.	Winnipeg	MB	Industrial	Portable Gauge
2023-06-05	Seymour Pacific Developments Ltd.	Winnipeg	MB	Industrial	Portable Gauge
2023-06-06	Manitoba Infrastructure	Winnipeg	MB	Industrial	Portable Gauge
2023-06-06	Eng-Tech Consulting Limited	Winnipeg	MB	Industrial	Portable Gauge
2023-06-06	Carbon Asset Solutions Ltd.	Winnipeg	MB	Industrial	Portable Gauge
2023-06-07	Aecom Canada Ltd.	Winnipeg	MB	Industrial	Portable Gauge
2023-06-07	Stantec Consulting Ltd.	Winnipeg	MB	Industrial	Portable Gauge
2023-06-08	Manitoba Infrastructure	Portage la Prairie	MB	Industrial	Portable Gauge
2023-06-08	University of Calgary	Calgary	AB	Academic and research	Lab studies and consolidated use

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-06-08	Maple Leaf Construction Ltd.	Winnipeg	MB	Industrial	Portable Gauge
2023-06-08	9395-8049 QC Inc.	Montréal	QC	Industrial	Portable Gauge
2023-06-08	2115646 (Manitoba)	Portage La Prairie	MB	Industrial	Portable Gauge
2023-06-08	Isologic Innovative Radiopharmaceuticals Ltd.	Dorval	QC	Commercial	Isotope production Acc.
2023-06-08	Sunnybrook Health Sciences Centre	Toronto	ON	Medical	Radiation Therapy
2023-06-09	Almor Testing Services Ltd.	Calgary	AB	Industrial	Portable Gauge
2023-06-09	H. Manalo Consulting	Winnipeg	MB	Industrial	Portable Gauge
2023-06-09	Dr. David Lautner	Calgary	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-06-09	WSP E & I CANADA LIMITED	Oakville	ON	Industrial	Portable Gauge
2023-06-13	Certified Testing Systems (2009) Inc.	Kitchener	ON	Industrial	Industrial Radiography
2023-06-14	Landtek Limited	Hamilton	ON	Industrial	Portable Gauge
2023-06-14	Strilkiwski Contracting Ltd.	Snow Lake	MB	Industrial	Portable Gauge
2023-06-15	Thurber Engineering Ltd.	Oakville	ON	Industrial	Portable Gauge
2023-06-15	Union Street Geotechnical Ltd.	Red Deer	AB	Industrial	Portable Gauge
2023-06-15	Peto MacCallum Ltd.	Hamilton	ON	Industrial	Portable Gauge
2023-06-15	Soil-Mat Engineers & Consultants Ltd.	Hamilton	ON	Industrial	Portable Gauge
2023-06-15	G2S Environmental Consulting Inc.	Burlington	ON	Industrial	Portable Gauge
2023-06-21	Les Entreprises Michaudville Inc	Mont-Saint-Hilaire	QC	Industrial	Portable Gauge
2023-06-21	NOVA Chemicals Corporation	Calgary	AB	Industrial	Fixed Gauge
2023-06-21	Centre intégré universitaire de santé et de services sociaux du Centre-Ouest-de-l'Île-de-Montréal	Montreal	QC	Medical	Radiation Therapy
2023-06-22	City of Calgary	Calgary	AB	Industrial	Portable Gauge
2023-06-22	Centre hospitalier de l'Université de Montréal	Montreal	QC	Commercial	Isotope production Acc.

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-06-22	Centre hospitalier de l'Université de Montréal	Montreal	QC	Medical	Radiation Therapy
2023-07-05	CancerCare Manitoba	Winnipeg	MB	Medical	Radiation Therapy
2023-07-05	Shared Health	Winnipeg	MB	Medical	Radiation Therapy
2023-07-06	IKO Industries Ltd.	Madoc	ON	Industrial	Fixed Gauge
2023-07-06	Carbon Assests	Calgary	AB	Industrial	Other industrial
2023-07-10	AM Inspection Limited	Saskatoon	SK	Industrial	Industrial Radiography
2023-07-10	AM Inspection Limited	Estevan	SK	Industrial	Industrial Radiography
2023-07-10	Enviro-Ex Contracting Ltd.	Prince George	BC	Industrial	Portable Gauge
2023-07-11	Quesnel River Pulp Company	Quesnel	BC	Industrial	Fixed Gauge
2023-07-11	Weatherford Canada Ltd.	Estevan	SK	Industrial	Oil well Logging
2023-07-11	TISI Canada Inc.	Regina	SK	Industrial	Industrial Radiography
2023-07-11	Evergreen Geotechnical Inc.	150 Mile House	BC	Industrial	Portable Gauge
2023-07-11	Eclipse E-Line Services Inc.	Moose Jaw	SK	Industrial	Oil well Logging
2023-07-11	ROFS Canada Ltd.	Estevan	SK	Industrial	Oil well Logging
2023-07-11	Eclipse E-Line Services Inc.	Moose Jaw	SK	Industrial	Oil well Logging
2023-07-12	Slick Inspection Limited	Medicine Hat	AB	Industrial	Industrial Radiography
2023-07-12	Slick Inspection Limited	Kindersley	SK	Industrial	Industrial Radiography
2023-07-12	ParklandGEO Ltd.	Estevan	SK	Industrial	Portable Gauge
2023-07-12	Envirogeotech Consulting Inc.	Medicine Hat	AB	Industrial	Portable Gauge
2023-07-12	Tidewater Midstream and Infrastructure Ltd.	Prince George	BC	Industrial	Fixed Gauge
2023-07-12	Horizon Testing Inc.	Prince George	BC	Industrial	Industrial Radiography
2023-07-13	Saskatchewan Power Corporation	Estevan	SK	Industrial	Fixed Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-07-13	Saskatchewan Power Corporation	Estevan	SK	Industrial	Fixed Gauge
2023-07-13	Saskatchewan Power Corporation	Coronach	SK	Industrial	Fixed Gauge
2023-07-13	Saskatchewan Power Corporation	Coronach	SK	Industrial	Fixed Gauge
2023-07-13	AM Inspection Limited	Estevan	SK	Industrial	Industrial Radiography
2023-07-13	Mosaic Canada ULC	Belle Plaine	SK	Industrial	Portable Gauge
2023-07-13	Mosaic Canada ULC	Belle Plaine	SK	Industrial	Oil well Logging
2023-07-13	Mosaic Canada ULC	Belle Plaine	SK	Industrial	Fixed Gauge
2023-07-14	TISI Canada Inc.	Regina	SK	Industrial	Industrial Radiography
2023-07-18	Boss Wireline Services Ltd.	Brooks	AB	Industrial	Oil well Logging
2023-07-18	Bare Contracting Services Ltd.	Mississauga	ON	Industrial	Portable Gauge
2023-07-18	WSP Canada Inc.	Medicine Hat	AB	Industrial	Portable Gauge
2023-07-19	Chung & Vander Doelen Engineering Ltd.	Kitchener	ON	Industrial	Portable Gauge
2023-07-19	Steed and Evans Limited	St. Jacobs	ON	Industrial	Portable Gauge
2023-07-19	Voltage Wireline Inc.	Brooks	AB	Industrial	Oil well Logging
2023-07-19	GHD Consultants Ltd.	St Catharines	ON	Industrial	Portable Gauge
2023-07-19	WSP Canada Inc.	Mississauga	ON	Industrial	Portable Gauge
2023-07-21	Terraprobe Testing Ltd.	Brampton	ON	Industrial	Portable Gauge
2023-07-21	Nasiruddin Engineering Limited	Mississauga	ON	Industrial	Portable Gauge
2023-07-25	Commandité Emballages Kruger Inc.	Montréal	QC	Industrial	Fixed Gauge
2023-07-25	Polarpak Company Inc.	Saint-Laurent	QC	Industrial	Fixed Gauge
2023-07-26	Soil Engineers Ltd.	Oshawa	ON	Industrial	Portable Gauge
2023-07-26	Capital Paving Inc.	Puslinch	ON	Industrial	Portable Gauge
2023-07-26	HLV2K Engineering Limited	Mississauga	ON	Industrial	Portable Gauge
2023-07-26	HLV2K Engineering Limited	Mississauga	ON	Industrial	Portable Gauge
2023-07-26	Gemtec Consulting Engineers and Scientists Limited	Oshawa	ON	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-07-27	Border Paving Ltd.	Red Deer	AB	Industrial	Portable Gauge
2023-07-27	Mistras Canada, Inc.	Calgary	AB	Industrial	Industrial Radiography
2023-07-28	Frontop Engineering Limited	Markham	ON	Industrial	Portable Gauge
2023-07-28	WSP Canada Inc.	Whitby	ON	Industrial	Portable Gauge
2023-07-28	HLV2K Engineering Limited	Mississauga	ON	Industrial	Portable Gauge
2023-07-28	EXP Services Inc.	Markham	ON	Industrial	Portable Gauge
2023-07-31	Kirkland Lake Gold Ltd.	Matheson	ON	Industrial	Fixed Gauge
2023-08-01	Gamma-Tech Inspection Ltd.	Calgary	AB	Industrial	Industrial Radiography
2023-08-01	Q Test Inspection Ltd.	Calgary	AB	Industrial	Industrial Radiography
2023-08-01	TriQuest Nondestructive Testing Corp.	Calgary	AB	Industrial	Industrial Radiography
2023-08-01	Glencore Canada Corporation	Timmins	ON	Industrial	Fixed Gauge
2023-08-02	Sintra Inc.	North Hatley	QC	Industrial	Portable Gauge
2023-08-02	ParklandGEO Ltd.	Calgary	AB	Industrial	Portable Gauge
2023-08-02	ParklandGEO Ltd.	Calgary	AB	Industrial	Portable Gauge
2023-08-02	Construction DJL Inc.	Hatley	QC	Industrial	Portable Gauge
2023-08-02	FNX-INNOV Inc.	Sherbrooke	QC	Industrial	Portable Gauge
2023-08-02	Glencore Canada Corporation	Timmins	ON	Industrial	Fixed Gauge
2023-08-03	Northern Sun Mining Corp.	South Porcupine	ON	Industrial	Fixed Gauge
2023-08-03	Lake Shore Gold Corp.	Porcupine	ON	Industrial	Fixed Gauge
2023-08-04	Timmins and District Hospital	Timmins	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-04	Timmins and District Hospital	Timmins	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-04	The Corporation of the City of Timmins	Timmins	ON	Industrial	Portable Gauge
2023-08-09	Centre Intégré de Santé et de Services Sociaux de Laval	Laval	QC	Medical	Diagnostic and therapeutic nuclear medicine

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-08-09	Centre Intégré de Santé et de Services Sociaux de Laval	Laval	QC	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-09	ROFS Canada Ltd.	Red Deer	AB	Industrial	Oil well Logging
2023-08-09	Custom Pipe Services Inc.	Leduc	AB	Industrial	Industrial Radiography
2023-08-09	EnergySolutions Canada Corporation	Tiverton	ON	Commercial	Waste nuclear substance
2023-08-10	Entreprise Gestion Indorama Inc.	Montréal	QC	Industrial	Fixed Gauge
2023-08-10	Klöckner Pentaplast Company	Montréal	QC	Industrial	Fixed Gauge
2023-08-10	Kamit Group Ltd.	Edmonton	AB	Industrial	Industrial Radiography
2023-08-14	Insight Medical Holdings Ltd.	Edmonton	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-14	Innotech Alberta Inc.	Edmonton	AB	Academic and research	Lab studies and consolidated use
2023-08-14	Knight Piésold Ltd.	Vancouver	BC	Industrial	Portable Gauge
2023-08-14	Metalcare Group Inc.	Richmond	BC	Industrial	Portable Gauge
2023-08-14	WSP Canada Inc.	Burnaby	BC	Industrial	Portable Gauge
2023-08-14	Terran Geotechnical Consultants Ltd.	Vancouver	BC	Industrial	Portable Gauge
2023-08-15	GFL Environmental Services Inc.	North Vancouver	BC	Industrial	Fixed Gauge
2023-08-15	Cave Inspection Ltd.	Lloydminster	AB	Industrial	Industrial Radiography
2023-08-15	Cave Inspection Ltd.	Lloydminster	AB	Industrial	Industrial Radiography
2023-08-15	Cave Inspection Ltd.	Wainwright	AB	Industrial	Industrial Radiography
2023-08-15	RTD Canada Inc.	Delta	BC	Industrial	Fixed Gauge
2023-08-15	Terrane Engineering Group Ltd.	North Vancouver	BC	Industrial	Portable Gauge
2023-08-15	Lafarge Canada Inc.	Richmond	BC	Industrial	Fixed Gauge
2023-08-16	Stuart Hunt & Associates Ltd.	Edmonton	AB	Commercial	Servicing

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-08-16	Layfield Canada Ltd.	Richmond	BC	Industrial	Fixed Gauge
2023-08-16	Bare Contracting Services Ltd.	Mississauga	ON	Industrial	Portable Gauge
2023-08-16	Bare Contracting Services Ltd.	Scarborough	ON	Industrial	Portable Gauge
2023-08-16	SNC-Lavalin Inc.	Laval	QC	Industrial	Portable Gauge
2023-08-16	Stantec Consulting Ltd.	Laval	QC	Industrial	Portable Gauge
2023-08-16	Lehigh Northwest Cement Limited	Delta	BC	Industrial	Fixed Gauge
2023-08-16	FNX-INNOV Inc.	Longueuil	QC	Industrial	Portable Gauge
2023-08-16	FNX-INNOV Inc.	Longueuil	QC	Industrial	Portable Gauge
2023-08-17	Davroc Testing Laboratories Inc.	Brampton	ON	Industrial	Portable Gauge
2023-08-17	Isologic Innovative Radiopharmaceuticals Ltd.	Vancouver	BC	Commercial	Processing of Nuclear substances
2023-08-17	British Columbia Cancer Agency	Vancouver	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-17	British Columbia Cancer Agency	Vancouver	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-17	Provincial Health Services Authority	Vancouver	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-17	Provincial Health Services Authority	Vancouver	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-17	British Columbia Cancer Agency	Vancouver	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-17	WSP E & I CANADA LIMITED	Cambridge	ON	Industrial	Portable Gauge
2023-08-18	879142 Alberta Ltd.	Vancouver	BC	Commercial	Distribution
2023-08-18	879142 Alberta Ltd.	Vancouver	BC	Commercial	Servicing
2023-08-18	ALS Canada Ltd.	North Vancouver	BC	Academic and research	Lab studies and consolidated use
2023-08-18	Queen's University at Kingston	Kingston	ON	Academic and research	Other academic and research

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-08-18	Kingston Health Sciences Centre	Kingston	ON	Medical	Radiation Therapy
2023-08-18	Kingston Health Sciences Centre	Kingston	ON	Medical	Radiation Therapy
2023-08-21	Atlantic Mining NS Inc.	Mooseland	NS	Industrial	Fixed Gauge
2023-08-21	Saskatchewan Health Authority	Saskatoon	SK	Medical	Other medical
2023-08-21	Saskatchewan Health Authority	Saskatoon	SK	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-21	Saskatchewan Health Authority	Saskatoon	SK	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-22	Saskatchewan Cancer Agency	Saskatoon	SK	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-22	Saskatchewan Cancer Agency	Saskatoon	SK	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-22	P. Machibroda Engineering Ltd.	Saskatoon	SK	Industrial	Portable Gauge
2023-08-22	Harbourside Geotechnical Consultants Limited	Dartmouth	NS	Industrial	Portable Gauge
2023-08-23	University of Prince Edward Island	Charlottetown	PE	Academic and research	Lab studies and consolidated use
2023-08-23	University of Prince Edward Island	Charlottetown	PE	Academic and research	Lab studies and consolidated use
2023-08-23	Associated Engineering (Sask.) Ltd.	Saskatoon	SK	Industrial	Portable Gauge
2023-08-23	EastTech Engineering Consultants Inc.	Bethel	PE	Industrial	Portable Gauge
2023-08-23	Integrated Engineering Inc.	Saskatoon	SK	Industrial	Portable Gauge
2023-08-23	Nucléom Inc.	Québec	QC	Industrial	Industrial Radiography
2023-08-23	University of Ottawa Heart Institute	Ottawa	ON	Commercial	Isotope production Acc.
2023-08-23	Centre for Probe Development and Commercialization	Hamilton	ON	Commercial	Other commercial

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-08-24	Diagnostic Imaging	Charlottetown	PE	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-24	Diagnostic Imaging	Charlottetown	PE	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-24	PEI Department of Transportation, Infrastructure and Energy	Mount Stewart	PE	Industrial	Portable Gauge
2023-08-24	Thurber Engineering Ltd.	Saskatoon	SK	Industrial	Portable Gauge
2023-08-24	P. Machibroda Engineering Ltd.	Saskatoon	SK	Industrial	Portable Gauge
2023-08-24	MPE Engineering Ltd.	Saskatoon	SK	Industrial	Portable Gauge
2023-08-24	British Columbia Cancer Agency	Vancouver	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-08-24	Centre hospitalier universitaire Sainte-Justine	Montréal	QC	Medical	Other medical
2023-08-24	Héma-Québec	Québec	QC	Medical	Other medical
2023-08-25	Clifton Engineering Group Inc.	Saskatoon	SK	Industrial	Portable Gauge
2023-08-25	Allnorth Consultants Limited	Saskatoon	SK	Industrial	Portable Gauge
2023-08-25	Allnorth Consultants Limited	Saskatoon	SK	Industrial	Portable Gauge
2023-08-25	Qualité N.D.E.	Mercier	QC	Commercial	Distribution
2023-08-25	Qualité N.D.E.	Mercier	QC	Commercial	Calibration
2023-08-29	Gazzola Paving Limited	Toronto	ON	Industrial	Portable Gauge
2023-08-29	Fluid Projects Consulting Inc.	Calgary	AB	Industrial	Portable Gauge
2023-08-29	PrairieGeo Engineering Ltd.	Calgary	AB	Industrial	Portable Gauge
2023-08-30	D. Crupi & Sons Limited	Toronto	ON	Industrial	Portable Gauge
2023-08-30	Coca-Cola Refreshments Canada Company	Brampton	ON	Industrial	Fixed Gauge
2023-08-30	PrairieGeo Engineering Ltd.	Calgary	AB	Industrial	Portable Gauge
2023-08-30	Provincial Health Services Authority	Victoria	BC	Medical	Radiation Therapy

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-08-30	Provincial Health Services Authority	Victoria	BC	Medical	Radiation Therapy
2023-09-01	Candu Energy Inc.	Mississauga and Whitby	ON	Commercial	Waste nuclear substance
2023-09-11	Mosaic Esterhazy Holdings Ltd.	Esterhazy	SK	Industrial	Fixed Gauge
2023-09-11	Mosaic Esterhazy Holdings Ltd.	Esterhazy	SK	Industrial	Fixed Gauge
2023-09-11	Children's Hospital of Eastern Ontario	Ottawa	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-11	Children's Hospital of Eastern Ontario	Ottawa	ON	Academic and research	Lab studies and consolidated use
2023-09-11	Children's Hospital of Eastern Ontario	Ottawa	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-11	Pavages Maska Inc.	Magog	QC	Industrial	Portable Gauge
2023-09-11	Granulab Inc.	Sherbrooke	QC	Industrial	Portable Gauge
2023-09-11	R.M. Belanger Limited	Chelmsford	ON	Industrial	Portable Gauge
2023-09-11	St. Joseph's Health Care, London	London	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-11	St. Joseph's Health Care - London	London	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-11	St. Joseph's Health Care - London	London	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-11	St. Joseph's Health Care, London	London	ON	Medical	Vet. Nuclear medicine
2023-09-11	Almadon Holdings Ltd.	Calgary	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-11	Denis Gratton Construction	Chelmsford	ON	Industrial	Portable Gauge
2023-09-11	Paterson Group Inc.	Nepean	ON	Industrial	Portable Gauge
2023-09-11	Soli Solutions Inc.	Regina	SK	Industrial	Portable Gauge
2023-09-11	Scissors Creek Testing Inc.	Esterhazy	SK	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-09-12	Saskatchewan Ministry of Highways and Infrastructure	Regina	SK	Industrial	Portable Gauge
2023-09-12	Couillard Construction Limitée	Coaticook	QC	Industrial	Portable Gauge
2023-09-12	Lawson Health Research Institute	London	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-12	Lawson Health Research Institute	London	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-12	London Health Sciences Centre	London	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-12	London Health Sciences Centre	London	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-12	LRL Associates Ltd.	Ottawa	ON	Industrial	Portable Gauge
2023-09-12	Queensway Carleton Hospital	Nepean	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-12	Teranorth Construction & Engineering Limited	Sudbury	ON	Industrial	Portable Gauge
2023-09-12	Fedorowich Construction Ltd.	Yorkton	SK	Industrial	Portable Gauge
2023-09-12	Graphic Packaging International Canada, ULC	East Angus	QC	Industrial	Fixed Gauge
2023-09-12	ParklandGEO Ltd.	Yorkton	SK	Industrial	Portable Gauge
2023-09-13	Université de Sherbrooke	Sherbrooke	QC	Academic and research	Lab studies and consolidated use
2023-09-13	Université de Sherbrooke	Sherbrooke	QC	Academic and research	Lab studies and consolidated use
2023-09-13	Université de Sherbrooke	Sherbrooke	QC	Academic and research	Lab studies and consolidated use
2023-09-13	Université de Sherbrooke	Sherbrooke	QC	Academic and research	Lab studies and consolidated use
2023-09-13	Université de Sherbrooke	Sherbrooke	QC	Academic and research	Lab studies and consolidated use
2023-09-13	Université de Sherbrooke	Sherbrooke	QC	Academic and research	Lab studies and consolidated use

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-09-13	Université de Sherbrooke	Sherbrooke	QC	Academic and research	Lab studies and consolidated use
2023-09-13	Université de Sherbrooke	Sherbrooke	QC	Academic and research	Lab studies and consolidated use
2023-09-13	Department of Medical Imaging	London	ON	Academic and research	Lab studies and consolidated use
2023-09-13	Health Sciences North	Sudbury	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-13	Health Sciences North	Sudbury	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-13	Almadon Holdings Ltd.	Calgary	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-13	Knight Vision Inspections Inc.	White City	SK	Industrial	Industrial Radiography
2023-09-13	Acuren Inc.	Regina	SK	Industrial	Industrial Radiography
2023-09-13	Tetra Tech Canada Inc.	Regina	SK	Industrial	Portable Gauge
2023-09-13	Regina Qu'Appelle Health Region	Regina	SK	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-13	Regina Qu'Appelle Health Region	Regina	SK	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-14	Sault Area Hospital	Sault Ste Marie	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-14	Sault Area Hospital	Sault Ste Marie	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-14	AHW Holdings Ltd.	Regina	SK	Industrial	Portable Gauge
2023-09-14	Consumers' Co-operative Refineries Ltd.	Regina	SK	Industrial	Other industrial
2023-09-14	Consumers' Co-Operative Refineries Ltd.	Regina	SK	Industrial	Fixed Gauge
2023-09-14	Tulloch Contract Administration Inc.	Sault Ste Marie	ON	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-09-14	Kresin Engineering Corporation	Sault Ste Marie	ON	Industrial	Portable Gauge
2023-09-14	Groupe ABS Inc.	Sherbrooke	QC	Industrial	Portable Gauge
2023-09-14	SNC-Lavalin Inc.	Regina	SK	Industrial	Portable Gauge
2023-09-14	Buffalo Inspection Services (2005) Inc.	Three Hills	AB	Industrial	Industrial Radiography
2023-09-14	Buffalo Inspection Services (2005) Inc.	Red Deer	AB	Industrial	Industrial Radiography
2023-09-14	Acuren Inc.	Regina	SK	Industrial	Industrial Radiography
2023-09-14	Acuren Inc.	Regina	SK	Industrial	Industrial Radiography
2023-09-14	Acuren Inc.	Regina	SK	Industrial	Industrial Radiography
2023-09-14	General Dynamics Land Systems - Canada Corporation	London	ON	Commercial	Servicing
2023-09-14	General Dynamics Land Systems - Canada Corporation	London	ON	Commercial	Servicing
2023-09-14	General Dynamics Land Systems - Canada Corporation	London	ON	Commercial	Servicing
2023-09-14	LDS Consultants Inc.	London	ON	Industrial	Portable Gauge
2023-09-14	EXP Services Inc.	Sherbrooke	QC	Industrial	Portable Gauge
2023-09-15	YARA Belle Plaine Inc.	Belle Plaine	SK	Industrial	Fixed Gauge
2023-09-15	Algoma Tubes Inc.	Sault Ste Marie	ON	Industrial	Fixed Gauge
2023-09-15	MTE Consultants Inc.	London	ON	Industrial	Portable Gauge
2023-09-15	Algoma Steel Inc.	Sault Ste Marie	ON	Industrial	Fixed Gauge
2023-09-18	Soli Solutions Inc.	Regina	SK	Industrial	Portable Gauge
2023-09-19	IRISNDT Corp.	Lloydminster	AB	Industrial	Industrial Radiography
2023-09-19	Edward Wong & Associates Inc.	Markham	ON	Industrial	Portable Gauge
2023-09-20	Clifton Engineering Group Inc.	Lloydminster	AB	Industrial	Portable Gauge
2023-09-20	8418748 Canada Inc.	Montréal	QC	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-09-20	Englobe Corp.	Laval	QC	Industrial	Portable Gauge
2023-09-20	Englobe Corp.	Anjou	QC	Industrial	Portable Gauge
2023-09-20	Englobe Corp.	Varennes	QC	Industrial	Portable Gauge
2023-09-20	9395-8049 QC Inc.	Montréal	QC	Industrial	Portable Gauge
2023-09-20	Groupe ABS Inc.	Blainville	QC	Industrial	Portable Gauge
2023-09-20	Groupe ABS Inc.	Longueuil	QC	Industrial	Portable Gauge
2023-09-20	Solidearth Geotechnical Inc.	Lloydminster	AB	Industrial	Portable Gauge
2023-09-21	J.& P. Leveque Bros. Haulage Ltd.	Bancroft	ON	Industrial	Portable Gauge
2023-09-21	J.& P. Leveque Bros. Haulage Ltd.	Haliburton	ON	Industrial	Portable Gauge
2023-09-21	Montreal Neurological Institute and Hospital	Montreal	QC	Commercial	Isotope production Acc.
2023-09-25	IRISNDT Corp.	Edmonton	AB	Industrial	Industrial Radiography
2023-09-25	Inspectrum Testing Inc.	Grande Prairie	AB	Industrial	Industrial Radiography
2023-09-25	Nortech Advanced N.D.T. Ltd.	Fort St. John	BC	Industrial	Industrial Radiography
2023-09-25	SNC-Lavalin Inc.	Jonquière	QC	Industrial	Portable Gauge
2023-09-25	GTC Services Inc. o/a Adaptable N.D.T.	Bezanson	AB	Industrial	Industrial Radiography
2023-09-25	AEA Inspections Ltd.	Clairmont	AB	Industrial	Industrial Radiography
2023-09-26	Inspectrum Testing Inc.	Grande Prairie	AB	Industrial	Industrial Radiography
2023-09-26	Construction Norascon Inc.	Amos	QC	Industrial	Portable Gauge
2023-09-26	Bonnett’s Energy Corp.	Grande Prairie	AB	Industrial	Oil well Logging
2023-09-26	Aurora Inspection Limited	Sexsmith	AB	Industrial	Industrial Radiography
2023-09-26	Gamma Spec NDT Ltd.	Grande Prairie	AB	Industrial	Industrial Radiography
2023-09-26	ATKINSRÉALIS CANADA INC.	Val d'Or	QC	Industrial	Portable Gauge
2023-09-26	Anode NDT Ltd.	Grande Prairie	AB	Industrial	Industrial Radiography

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-09-26	Mistras Services Inc.	Saguenay	QC	Industrial	Industrial Radiography
2023-09-26	Centre intégré universitaire de santé et de services sociaux du Saguenay-Lac-Saint-Jean	Chicoutimi	QC	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-26	Centre intégré universitaire de santé et de services sociaux du Saguenay-Lac-Saint-Jean	Roberval	QC	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-26	Centre intégré universitaire de santé et de services sociaux du Saguenay-Lac-Saint-Jean	Chicoutimi	QC	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-26	L. Fournier et Fils Inc.	Val d'Or	QC	Industrial	Portable Gauge
2023-09-27	Alberta Health Services	Calgary	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-27	Alberta Health Services	Calgary	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-09-27	Oshanek Inspection Services (1972) Ltd.	Grande Prairie	AB	Industrial	Industrial Radiography
2023-09-27	Englobe Corp.	Rouyn-Noranda	QC	Industrial	Portable Gauge
2023-09-27	Galey Inspection Services Ltd.	Grande Prairie	AB	Industrial	Industrial Radiography
2023-09-27	20/20 ND Technology Inc.	Grande Prairie	AB	Industrial	Industrial Radiography
2023-09-27	Ultratest N.D.T. Services (2010) Inc.	Clairmont	AB	Industrial	Industrial Radiography
2023-09-27	React Radiography Ltd.	Grande Prairie	AB	Industrial	Industrial Radiography
2023-09-27	Buffalo Inspection Services (2005) Inc.	Grande Prairie	AB	Industrial	Industrial Radiography
2023-09-27	Buffalo Inspection Services (2005) Inc.	Grande Prairie	AB	Industrial	Industrial Radiography
2023-09-27	9372-2619 Québec inc.	Alma	QC	Industrial	Industrial Radiography
2023-09-27	WSP E & I CANADA LIMITED	Val d'Or	QC	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-09-27	Cline Inspection Ltd.	Grande Prairie	AB	Industrial	Industrial Radiography
2023-09-27	Université du Québec en Abitibi-Témiscamingue	Rouyn-Noranda	QC	Industrial	Portable Gauge
2023-09-28	Sacopan Inc.	Sacré-Coeur-Saguenay	QC	Industrial	Fixed Gauge
2023-09-28	20/20 ND Technology Inc.	Grande Prairie	AB	Industrial	Industrial Radiography
2023-09-28	Integrity Testing Services Inc.	Beaverlodge	AB	Industrial	Industrial Radiography
2023-09-28	Nortech Advanced N.D.T. Ltd.	Fort St. John	BC	Industrial	Industrial Radiography
2023-09-28	Nortech Advanced N.D.T. Ltd.	Edmonton	AB	Industrial	Industrial Radiography
2023-09-28	Niobec Inc.	Saint-Honoré-de-Chicoutimi	QC	Industrial	Fixed Gauge
2023-09-28	Glencore Canada Corporation	Matagami	QC	Industrial	Fixed Gauge
2023-09-28	Acuren Inc.	Oakville	ON	Industrial	Industrial Radiography
2023-09-28	Mistras Services Inc	Oakville	ON	Industrial	Industrial Radiography
2023-09-29	Groupe ABS Inc.	Blainville	QC	Industrial	Portable Gauge
2023-09-29	GTC Services Inc. o/a Adaptable N.D.T.	Bezanson	AB	Industrial	Industrial Radiography
2023-09-29	Cline Inspection Ltd.	Grande Prairie	AB	Industrial	Industrial Radiography
2023-09-29	TISI Canada Inc.	Oakville	ON	Industrial	Industrial Radiography
2023-10-11	Entreprise Gestion Indorama Inc.	Montréal	QC	Industrial	Fixed Gauge
2023-10-12	Elekta	Atlanta	GA	Commercial	Servicing
2023-10-16	Impala Canada Ltd.	Thunder Bay	ON	Industrial	Fixed Gauge
2023-10-17	ArcelorMittal Coteau-du-Lac Inc.	Coteau-du-Lac	QC	Industrial	Fixed Gauge
2023-10-17	Pioneer Construction Inc.	Thunder Bay	ON	Industrial	Portable Gauge
2023-10-17	Englobe Corp.	Thunder Bay	ON	Industrial	Portable Gauge
2023-10-17	Suncor Energy Inc.	Fort McMurray	AB	Industrial	Fixed Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-10-17	Lehigh Hanson Materials Limited	Edmonton	AB	Industrial	Fixed Gauge
2023-10-17	ProtechGeo & Material Testing Ltd.	Edmonton	AB	Industrial	Portable Gauge
2023-10-18	Royal Victoria Regional Health Centre	Barrie	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-10-18	Royal Victoria Regional Health Centre	Barrie	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-10-18	B. J. Halow & Son Constructors Ltd.	Rosslyn	ON	Industrial	Portable Gauge
2023-10-18	Stelco Inc.	Nanticoke	ON	Industrial	Fixed Gauge
2023-10-18	CEDA General Partners Ltd.	Fort McMurray	AB	Industrial	Fixed Gauge
2023-10-18	CEDA General Partners Ltd.	Fort McMurray	AB	Industrial	Fixed Gauge
2023-10-18	Qualitest Canada Ltd.	Nisku	AB	Industrial	Portable Gauge
2023-10-18	WSP Canada Inc.	Thunder Bay	ON	Industrial	Portable Gauge
2023-10-18	FNX-INNOV Inc.	Longueuil	QC	Industrial	Portable Gauge
2023-10-18	Building Products of Canada Corp.	Edmonton	AB	Industrial	Fixed Gauge
2023-10-18	E Construction, a division of N.P.A. Ltd.	Edmonton	AB	Industrial	Portable Gauge
2023-10-19	TBT Engineering Limited	Thunder Bay	ON	Industrial	Portable Gauge
2023-10-19	Inline Group Inc.	Fort Hills	AB	Industrial	Portable Gauge
2023-10-19	EXP Services Inc.	Thunder Bay	ON	Industrial	Portable Gauge
2023-10-20	Clifton Engineering Group Inc.	Calgary	AB	Industrial	Portable Gauge
2023-10-20	Taranis Contracting Group Ltd.	Thunder Bay	ON	Industrial	Portable Gauge
2023-10-23	Cargill Limited	Clavet	SK	Industrial	Fixed Gauge
2023-10-23	alphaNUCLEAR	Saskatoon	SK	Commercial	Calibration
2023-10-23	Atomic Inspection Services Ltd.	Fort St. John	BC	Industrial	Industrial Radiography
2023-10-23	McElhanney Ltd.	Fort St. John	BC	Industrial	Portable Gauge
2023-10-23	Alpha Omega	Bellflower	CA	Commercial	Servicing
2023-10-24	Sonoco Canada Corporation	Brantford	ON	Industrial	Fixed Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-10-24	5N Plus Inc.	Saint-Laurent	QC	Industrial	Fixed Gauge
2023-10-24	Wolverine Mining Complex Limited	Tumbler Ridge	BC	Industrial	Portable Gauge
2023-10-24	Wolverine Mining Complex Limited	Tumbler Ridge	BC	Industrial	Fixed Gauge
2023-10-24	Mosaic Potash Colonsay ULC	Colonsay	SK	Industrial	Fixed Gauge
2023-10-25	University of Saskatchewan	Saskatoon	SK	Academic and research	Lab studies and consolidated use
2023-10-25	University of Saskatchewan	Saskatoon	SK	Academic and research	Lab studies and consolidated use
2023-10-25	University of Saskatchewan	Saskatoon	SK	Academic and research	Lab studies and consolidated use
2023-10-25	Buffalo Inspection Services (2005) Inc.	Fort St. John	BC	Industrial	Industrial Radiography
2023-10-25	Buffalo Inspection Services (2005) Inc.	Fort St. John	BC	Industrial	Industrial Radiography
2023-10-25	Deka Inspection Services Ltd.	Charlie Lake	BC	Industrial	Industrial Radiography
2023-10-25	MTE Consultants Inc.	Stratford	ON	Industrial	Portable Gauge
2023-10-25	Northriver Midstream Inc.	Wonowon	BC	Industrial	Fixed Gauge
2023-10-25	Northriver Midstream Inc.	Pink Mountain	BC	Industrial	Fixed Gauge
2023-10-25	GRIT Engineering Inc.	Stratford	ON	Industrial	Portable Gauge
2023-10-26	AM Inspection Limited	Saskatoon	SK	Industrial	Industrial Radiography
2023-10-26	CRH Canada Inc.	Barrie	ON	Industrial	Portable Gauge
2023-10-26	ParklandGEO Ltd.	Fort St. John	BC	Industrial	Portable Gauge
2023-10-26	GEI Consultants, a Division of Savanta Inc.	Barrie	ON	Industrial	Portable Gauge
2023-10-26	Gunron Inspections Ltd.	Yellowhead County	AB	Industrial	Industrial Radiography
2023-10-26	Gunron Inspections Ltd.	Yellowhead County	AB	Industrial	Industrial Radiography
2023-10-26	Hamilton Health Sciences Corporation	Hamilton	ON	Medical	Radiation Therapy
2023-10-27	WSP Canada Inc.	Saskatoon	SK	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-10-27	Golder Associates Ltd.	Saskatoon	SK	Academic and research	Lab studies and consolidated use
2023-10-30	Hamilton Health Sciences Corporation	Hamilton	ON	Medical	Radiation Therapy
2023-11-02	DS Consultants Ltd.	Cambridge	ON	Industrial	Portable Gauge
2023-11-02	EXP Services Inc.	Cambridge	ON	Industrial	Portable Gauge
2023-11-06	British Columbia Institute of Technology	Burnaby	BC	Academic and research	Lab studies and consolidated use
2023-11-06	British Columbia Institute of Technology	Burnaby	BC	Industrial	Fixed Gauge
2023-11-06	British Columbia Institute of Technology	Burnaby	BC	Industrial	Other industrial
2023-11-06	British Columbia Institute of Technology	Burnaby	BC	Commercial	Calibration
2023-11-06	Geowest Testing Services Ltd.	Burnaby	BC	Industrial	Portable Gauge
2023-11-06	The Pepsi Bottling Group (Canada), ULC	Winnipeg	MB	Industrial	Fixed Gauge
2023-11-06	Vancouver Coastal Health Authority	Surrey	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-06	Vancouver Coastal Health Authority	Surrey	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-06	Vancouver Coastal Health Authority	Surrey	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-07	College of the North Atlantic	Port aux Basques	NL	Industrial	Industrial Radiography
2023-11-07	HSC-Kleysen Institute for Advanced Medicine	Winnipeg	MB	Academic and research	Lab studies and consolidated use
2023-11-07	Shared Health	Winnipeg	MB	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-07	Shared Health	Winnipeg	MB	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-07	Shared Health	Winnipeg	MB	Medical	Diagnostic and therapeutic nuclear medicine

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-11-07	Shared Health	Winnipeg	MB	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-07	Winnipeg Regional Health Authority	Winnipeg	MB	Commercial	Processing of Nuclear substances
2023-11-07	Shared Health	Winnipeg	MB	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-07	Shared Health	Winnipeg	MB	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-07	TriQuest Nondestructive Testing Corp.	Edmonton	AB	Industrial	Industrial Radiography
2023-11-07	Initio Medical Group Inc.	Burnaby	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-07	Initio Medical Group Inc.	Burnaby	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-07	Initio Medical Group Inc.	Burnaby	BC	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-07	ARCADIS Canada Inc.	Richmond Hill	ON	Industrial	Portable Gauge
2023-11-07	B & B Contracting (2012) Ltd.	Surrey	BC	Industrial	Portable Gauge
2023-11-07	Hoskin Scientific Limited	Burnaby	BC	Commercial	Servicing
2023-11-07	Hoskin Scientific Limited	Burnaby	BC	Commercial	Distribution
2023-11-07	Braun Geotechnical Ltd.	Surrey	BC	Industrial	Portable Gauge
2023-11-07	STERIS	Stittsville	ON	Industrial	Other industrial
2023-11-07	Nordion	Ottawa	ON	Commercial	Servicing
2023-11-08	Corner Brook Pulp and Paper Limited	Corner Brook	NL	Industrial	Fixed Gauge
2023-11-08	ITL Testing Laboratories Ltd.	Port Coquitlam	BC	Industrial	Portable Gauge
2023-11-08	Western Memorial Regional Hospital	Corner Brook	NL	Medical	Diagnostic and therapeutic nuclear medicine

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-11-08	Western Memorial Regional Hospital	Corner Brook	NL	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-08	Winnipeg Regional Health Authority	Winnipeg	MB	Academic and research	Lab studies and consolidated use
2023-11-08	Winnipeg Regional Health Authority	Winnipeg	MB	Academic and research	Lab studies and consolidated use
2023-11-08	TriQuest Nondestructive Testing Corp.	Edmonton	AB	Industrial	Industrial Radiography
2023-11-08	42256 Yukon Inc.	Whitehorse	YT	Industrial	Portable Gauge
2023-11-08	2345171 Ontario Inc.	Guelph	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-08	Tier 1 Energy Solutions, Inc.	Leduc	AB	Industrial	Oil well Logging
2023-11-08	Honeywell Limited / Honeywell Limitée	Corner Brook	NL	Commercial	Servicing
2023-11-08	Tetra Tech Canada Inc.	Whitehorse	YT	Industrial	Portable Gauge
2023-11-08	Metro Testing & Engineering Ltd.	Abbotsford	BC	Industrial	Portable Gauge
2023-11-08	10497339 Canada Inc.	Cambridge	ON	Industrial	Fixed Gauge
2023-11-08	Paragon Wireline Services Ltd.	Calmar	AB	Industrial	Oil well Logging
2023-11-08	Kontur Geotechnical Consultants Inc.	Port Coquitlam	BC	Industrial	Portable Gauge
2023-11-09	Government of Yukon	Whitehorse	YT	Industrial	Portable Gauge
2023-11-09	Memorial University of Newfoundland	Corner Brook	NL	Academic and research	Lab studies and consolidated use
2023-11-09	KCS Plastics Ltd.	Langley	BC	Industrial	Fixed Gauge
2023-11-09	Allnorth Consultants Limited	Corner Brook	NL	Industrial	Portable Gauge
2023-11-09	AtkinsRéalis Canada Inc.	Edmonton	AB	Industrial	Portable Gauge
2023-11-09	Lhoist North America of Canada Inc.	Langley	BC	Industrial	Fixed Gauge
2023-11-09	Tetra Tech Canada Inc.	Coquitlam	BC	Industrial	Portable Gauge
2023-11-09	WSP Canada Inc.	Whitehorse	YT	Industrial	Portable Gauge
2023-11-09	Intertek Testing Services NA Ltd	Coquitlam	BC	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-11-10	Government of Yukon	Whitehorse	YT	Industrial	Portable Gauge
2023-11-10	University of Winnipeg	Winnipeg	MB	Academic and research	Lab studies and consolidated use
2023-11-10	University of Winnipeg	Winnipeg	MB	Academic and research	Lab studies and consolidated use
2023-11-10	Produits Kruger inc./ Kruger Products Inc.	New Westminster	BC	Industrial	Fixed Gauge
2023-11-10	Kontur Geotechnical Consultants Inc.	Port Coquitlam	BC	Industrial	Portable Gauge
2023-11-10	All Road Construction Inc.	Coquitlam	BC	Industrial	Portable Gauge
2023-11-14	Sintra Inc.	St-Isidore	QC	Industrial	Portable Gauge
2023-11-14	AM Inspection Limited	Stettler	AB	Industrial	Industrial Radiography
2023-11-14	AM Inspection Limited	Stettler	AB	Industrial	Industrial Radiography
2023-11-14	Aecon Construction and Materials Limited	Caledon	ON	Industrial	Portable Gauge
2023-11-14	TISI Canada Inc.	Red Deer	AB	Industrial	Industrial Radiography
2023-11-15	Kaye Edmonton Clinic	Red Deer	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-15	Cross Cancer Institute-Nuclear Medicine Department	Red Deer	AB	Medical	Diagnostic and therapeutic nuclear medicine
2023-11-16	J.T. Donald Consultants Limited	Markham	ON	Industrial	Portable Gauge
2023-11-16	Canada Engineering Services Inc.	Toronto	ON	Industrial	Portable Gauge
2023-11-16	GIP Paving (Canada) Inc.	Toronto	ON	Industrial	Portable Gauge
2023-11-16	1000018537 Ontario Inc. O/A Viola Management Inc.	Markham	ON	Industrial	Portable Gauge
2023-11-16	Eclipse E-Line Services Inc.	Sylvan Lake	AB	Industrial	Oil well Logging
2023-11-21	Frontier Sonde Inc.	Richmond	BC	Industrial	Oil well Logging
2023-11-21	Universify of Guelph	Guelph	ON	Academic and research	Other academic and research

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-11-22	Uni-Vert Tech Inc.	Sainte-Marcelline de Kildare	QC	Commercial	Servicing
2023-11-22	Universify of Guelph	Guelph	ON	Medical	Vet. Nuclear medicine
2023-11-23	Grand River Hospital Corporation	Kitchener	ON	Medical	Radiation Therapy
2023-11-24	CIUSSS de l'Estrie	Sherbrooke	QC	Medical	Radiation Therapy
2023-11-24	CIUSSS de l'Estrie	Sherbrooke	QC	Commercial	Isotope production Acc.
2023-11-28	GeoPro Consulting Limited	Richmond Hill	ON	Industrial	Portable Gauge
2023-11-29	Process Research ORTECH Inc.	Mississauga	ON	Academic and research	Lab studies and consolidated use
2023-11-29	ROHI Engineering Ltd.	Ponoka	AB	Industrial	Portable Gauge
2023-11-30	Orbit Engineering Limited	Brampton	ON	Industrial	Portable Gauge
2023-11-30	Sirati & Partners Consultants Ltd.	Markham	ON	Industrial	Portable Gauge
2023-12-01	Collective Arts Limited	Hamilton	ON	Industrial	Fixed Gauge
2023-12-04	Trent University	Peterborough	ON	Academic and research	Lab studies and consolidated use
2023-12-04	Trent University	Peterborough	ON	Academic and research	Lab studies and consolidated use
2023-12-04	Trent University	Peterborough	ON	Academic and research	Lab studies and consolidated use
2023-12-04	Glatfelter Gatineau Ltée	Gatineau	QC	Industrial	Fixed Gauge
2023-12-08	Fortress Specialty Cellulose Inc.	Thurso	QC	Industrial	Fixed Gauge
2023-12-11	Canadian Fertilizers Limited	Medicine Hat	AB	Industrial	Fixed Gauge
2023-12-11	NOV Canada ULC	Brooks	AB	Industrial	Portable Gauge
2023-12-12	Kronos Canada, Inc.	Varennes	QC	Industrial	Fixed Gauge
2023-12-12	Solmax International Inc.	Varennes	QC	Industrial	Fixed Gauge
2023-12-12	Oak Ridges Medical Diagnostic Imaging Inc.	Richmond Hill	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-12-12	WSP E & I CANADA LIMITED	Lloydminster	AB	Industrial	Portable Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-12-13	4338626 Canada Inc.	Montréal	QC	Industrial	Fixed Gauge
2023-12-13	TriQuest Nondestructive Testing Corp.	Lloydminster	AB	Industrial	Industrial Radiography
2023-12-13	NOV Canada ULC	Bonnyville	AB	Industrial	Portable Gauge
2023-12-13	Natural Resources Canada	Hamilton	ON	Industrial	Industrial Radiography
2023-12-14	Stern Laboratories Inc.	Hamilton	ON	Academic and research	Other academic and research
2023-12-14	ALI Excavation Inc.	Salaberry-de-Valleyfield	QC	Industrial	Portable Gauge
2023-12-14	Canadian Natural Resources Limited	Bonnyville	AB	Industrial	Fixed Gauge
2023-12-14	Canadian Natural Resources Limited	Lindbergh	AB	Industrial	Fixed Gauge
2023-12-14	Centre intégré universitaire de santé et de services sociaux de l'ouest de l'île de Montréal	Pointe-Claire	QC	Medical	Diagnostic and therapeutic nuclear medicine
2023-12-14	Centre intégré universitaire de santé et de services sociaux de l'ouest de l'île de Montréal	Pointe-Claire	QC	Medical	Diagnostic and therapeutic nuclear medicine
2023-12-14	Environment and Climate Change Canada	Burlington	ON	Academic and research	Lab studies and consolidated use
2023-12-14	NUCM Associates Inc.	Oakville	ON	Commercial	Processing of Nuclear substances
2023-12-14	12819163 Canada Inc. O/A Heart and Vascular Centre of Excellence	Vaughan	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-12-14	TTMP DIAGNOSTICS INC.	Mississauga	ON	Medical	Diagnostic and therapeutic nuclear medicine
2023-12-15	Troxler Canada Inc.	Mississauga	ON	Commercial	Distribution
2023-12-15	Troxler Canada Inc.	Mississauga	ON	Commercial	Servicing
2023-12-15	Imperial Oil Resources Limited	Cold Lake	AB	Industrial	Fixed Gauge
2023-12-15	Imperial Oil Resources Limited	Cold Lake	AB	Industrial	Fixed Gauge

Inspection date	Licensee name	City	Province/ State	Sector	Subsector
2023-12-18	Institut national de la recherche scientifique	Laval	QC	Medical	Other medical
2023-12-19	Pieridae Caroline Gas Complex	Caroline	AB	Industrial	Fixed Gauge
2023-12-21	PNJ Engineering Inc.	Toronto	ON	Industrial	Portable Gauge

Appendix D: Safety and Control Area Framework

The following table provides a high-level definition of each SCA.

Functional Area	Safety and Control Area	Definition
Management	Management System	Covers the framework which establishes the processes and programs required to ensure an organization achieves its safety objectives and continuously monitors its performance against these objectives and fostering a healthy safety culture.
Management	Human Performance Management	Covers activities that enable effective human performance through the development and implementation of processes that ensure that a sufficient number of licensee personnel are in all relevant job areas and have the necessary knowledge, skills, procedures and tools in place to safely carry out their duties.
Management	Operating Performance	Includes an overall review of the conduct of the licensed activities and the activities that enable effective performance.
Facility and Equipment	Safety Analysis	Covers maintenance of the safety analysis that supports that overall safety case for the facility. Safety analysis is a systematic evaluation of the potential hazards associated with the conduct of a proposed activity or facility and considers the effectiveness of preventive measures and strategies in reducing the effects of such hazards.
Facility and Equipment	Physical Design	Relates to activities that impact on the ability of systems, components and structures to meet and maintain their design basis given new information arising over time and taking changes in the external environment into account.

Facility and Equipment	Fitness for Service	Covers activities that impact on the physical condition of systems, components and structures to ensure that they remain effective over time. This area includes programs that ensure all equipment is available to perform its intended design function when called upon to do so.
Core Control Processes	Radiation Protection	Covers the implementation of a radiation protection program in accordance with the *Radiation Protection Regulations*. This program must ensure that contamination levels and radiation doses received by individuals are monitored and controlled and maintained ALARA.
Core Control Processes	Conventional Health and Safety	Covers the implementation of a program to manage workplace safety hazards and to protect workers.
Core Control Processes	Environmental Protection	Covers programs that identify, control and monitor all releases of radioactive and hazardous substances and effects on the environment from facilities or as the result of licensed activities.
Core Control Processes	Emergency Management and Fire Protection	Covers emergency plans and emergency preparedness programs which exist for emergencies and for non-routine conditions. This also includes any results of participation in exercises.
Core Control Processes	Waste Management	Covers internal waste-related programs which form part of the facility's operations up to the point where the waste is removed from the facility to a separate waste management facility. This area also covers the planning for decommissioning.
Core Control Processes	Security	Covers the programs required to implement and support the security requirements stipulated in the regulations, the licence, orders, or expectations for the facility or activity.
Core Control Processes	Safeguards and Non-Proliferation	Covers the programs and activities required for the successful implementation of the obligations arising from the Canada/International Atomic Energy Agency (IAEA) safeguards agreements, as well as all

		other measures arising from the *Treaty on the Non-Proliferation of Nuclear Weapons*.
Core Control Processes	Packaging and Transport	Covers programs for the safe packaging and transport of nuclear substances and radiation devices to and from the licensed facility.

Appendix E: Safety Performance Rating Levels

Table 4 explains the transition in the CNSC's rating terminology. Some inspection reports still use the previous rating levels because of the licensing and compliance system in use, but licensees using nuclear substances and radiation devices can expect to see a gradual transition to the new ratings. For the purposes of reporting in this ROR, the previous rating levels have been converted to the new levels.

Table 4: Transition in compliance rating terminology

Previous rating level	Description	New rating level	Description
A and B	Meets expectations	SA	Satisfactory
C	Improvement is required	BE	Below expectations
D	This area is seriously compromised	BE	Below expectations
E	Breakdown	UA	Unacceptable

E1: Satisfactory (SA)

Licensee meets all of the following criteria:

- Performance meets CNSC staff expectations
- Licensee non-compliances or performance issues, if any, are not risk-significant
- Any non-compliances or performance issues have been, or are being, adequately corrected

E2: Below Expectations (BE)

One or more of the following criteria apply:

- Performance does not meet CNSC staff expectations
- Licensee has risk-significant non-compliance(s) or performance issue(s)
- Non-compliances or performance issues are not being adequately corrected

E3: Unacceptable (UA)

One or both of the following criteria apply:

- Risk associated with a non-compliance or performance issue is unreasonable
- At least one significant non-compliance or performance issue exists with no associated corrective action

Note: Starting in 2019, facility performance assessment ratings were simplified and the "Fully Satisfactory (FS)" was replaced by the "Satisfactory (SA)" rating. It is important to recognize that a facility that received an SCA performance rating of FS in previous Regulatory Oversight Report and now has a rating of SA, does not necessarily indicate a reduction in performance.

Appendix F: Compliance performance

This appendix provides details regarding licensee compliance with additional details provided on the SCAs determined to be the most relevant in providing an overall indication of the safety performance of licensees in 2023. An overview of licensee compliance can be found in section 4 of this report.

It is important to note that a below expectations rating does not necessarily mean that a licensee's actions were unsafe. It could mean any of the following: licensee performance does not meet CNSC staff expectations, the licensee has risk-significant non-compliance(s) or performance issue(s), and/or non-compliances or performance issues are not being adequately corrected. Staff will issue unacceptable ratings in cases where licensee actions are unsafe – in 2023, only 7 unacceptable ratings were issued across all SCAs.

In all cases, for any below expectations ratings, CNSC staff ensured that licensees took appropriate corrective actions. For all unacceptable ratings, CNSC staff issued orders, with restrictions lifted only once the CNSC was satisfied that all conditions had been addressed by the licensee.

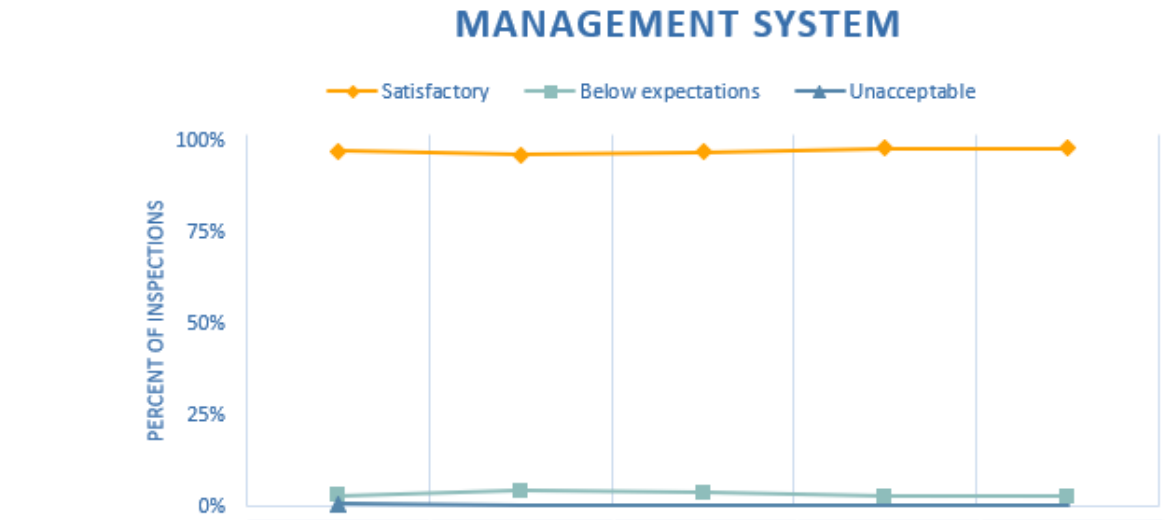
Data related to the environmental protection and the conventional health and safety SCAs is only included for WNSL in this section.

F1: Management system

Of the 727 inspections that looked at the management system SCA, 97% of the licensees inspected demonstrated that adequate processes and programs were in place to achieve their safety objectives and therefore received satisfactory ratings (figures 4 and 5). Figure 6 compares the 2023 ratings to the 5-year average by sector.

There were no unacceptable ratings in this SCA.

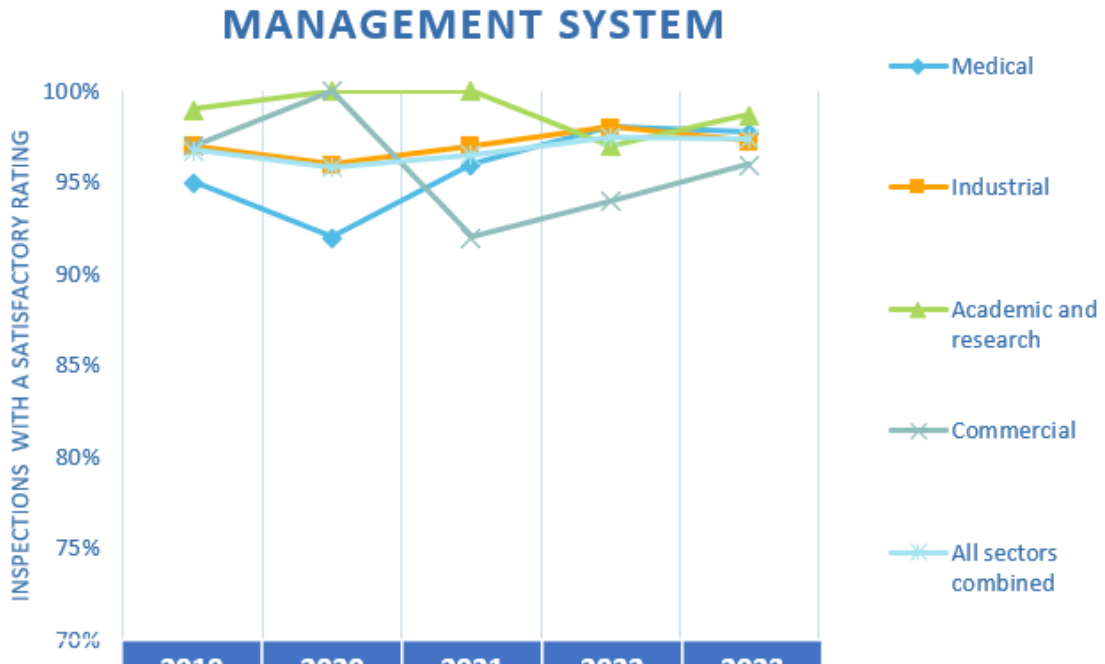
Figure 4: Inspection ratings for the management system SCA, 2019 to 2023



	2019	2020	2021	2022	2023
Satisfactory	739	321	472	582	708
Below expectations	22	14	17	15	19
Unacceptable	3	0	0	0	0
Total	764	335	489	597	727

Number of inspections

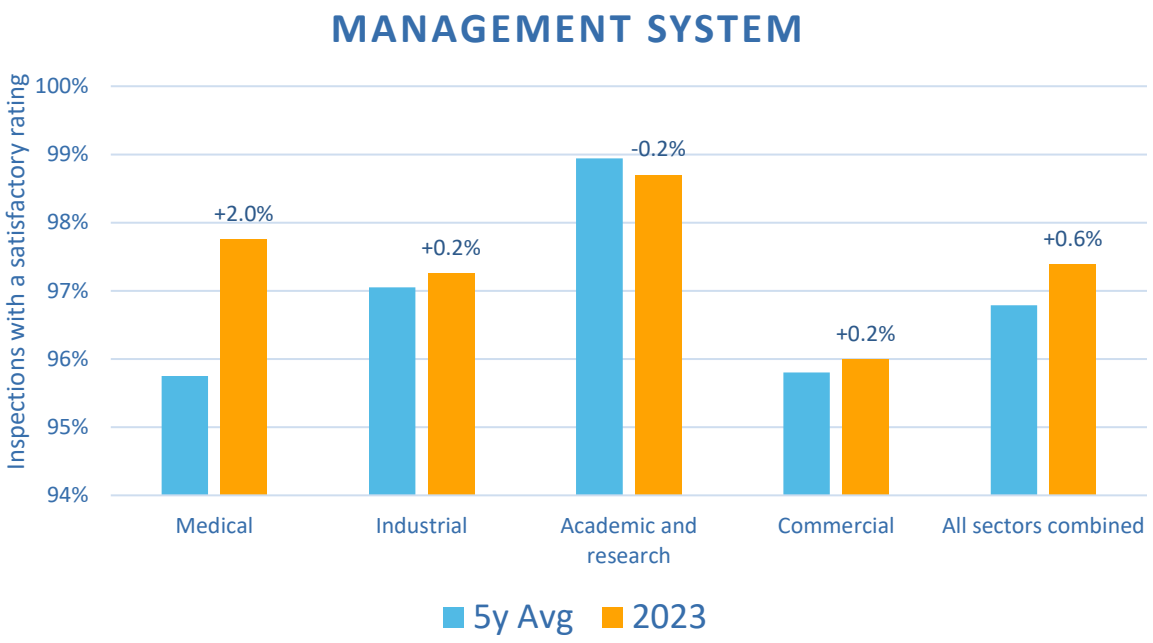
Figure 5: Sector-by-sector comparison of satisfactory inspection ratings for the management system SCA, 2019 to 2023



	2019	2020	2021	2022	2023
Medical	155	44	101	93	87
Industrial	475	254	329	427	497
Academic and research	73	9	18	33	76
Commercial	36	14	24	29	48
All sectors combined	739	321	472	582	708

Number or inspections with a satisfactory rating

Figure 6: Sector-by-sector comparison of satisfactory inspection ratings for the management system SCA, 2023 versus the 5-year average (2019 to 2023)

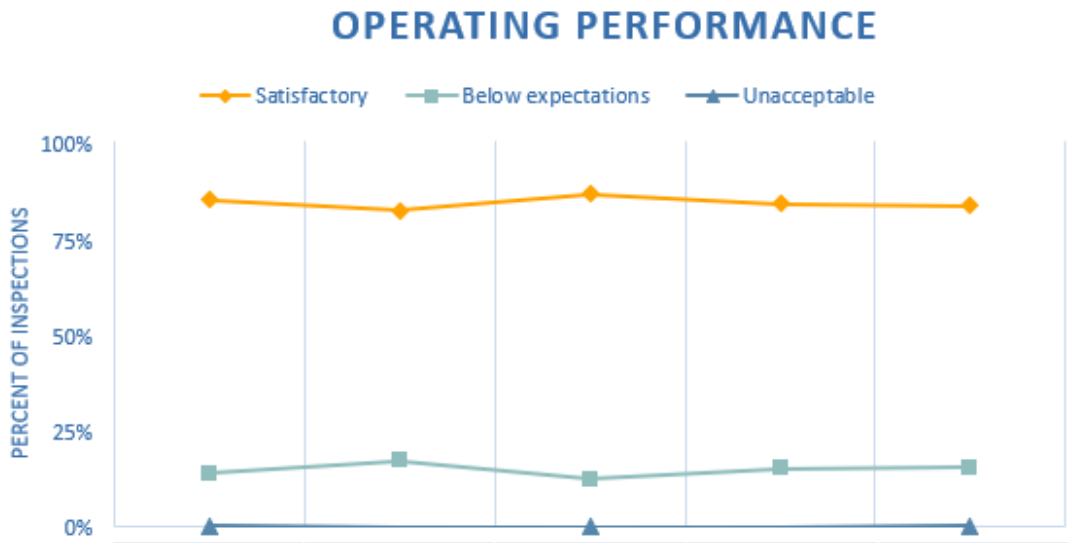


F2: Operating performance

Of the 746 inspections that looked at the operating performance SCA, 84% of the licensees inspected demonstrated that adequate processes and programs were in place to achieve their safety objectives and therefore received satisfactory ratings (figures 7 and 8). Figure 9 compares the 2023 ratings to the 5-year average by sector.

There were 2 unacceptable ratings in this SCA issued to licensees in the fixed gauge subsector. Orders 1145 and 1168 were issued in response to these inspections. Additional details on these orders can be found in appendix H. Both orders have been closed to the satisfaction of CNSC staff.

Figure 7: Inspection ratings for the operating performance SCA, 2019 to 2023



	2019	2020	2021	2022	2023
Satisfactory	672	292	463	521	628
Below expectations	110	61	67	95	116
Unacceptable	2	0	1	0	2
Total	784	353	531	616	746

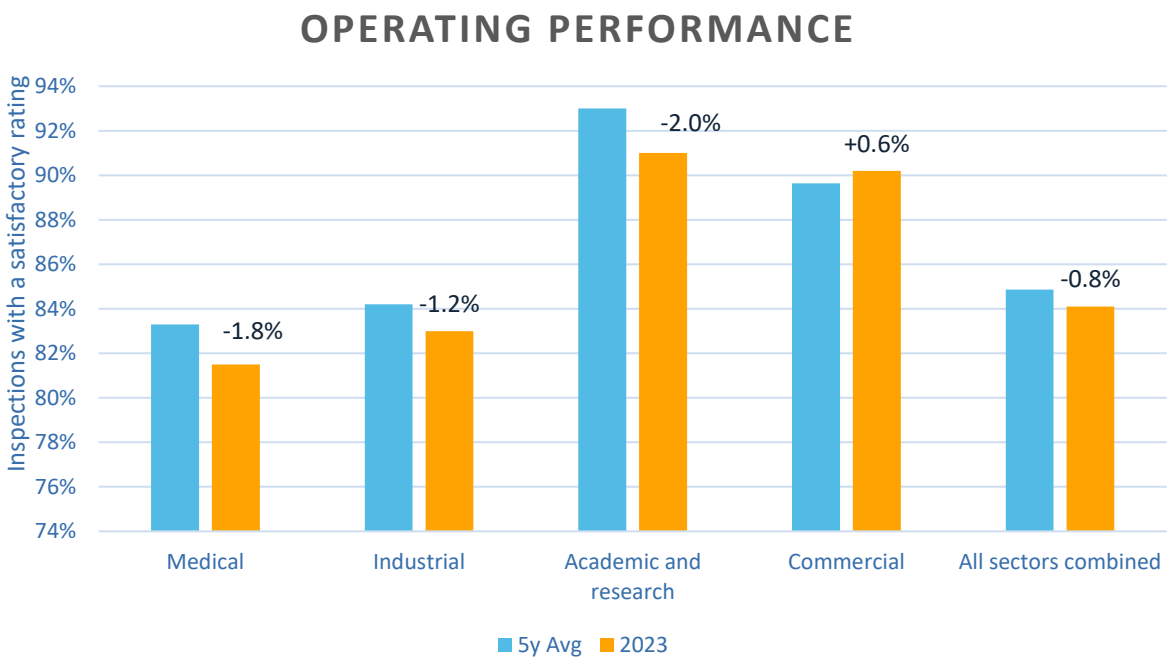
Number of inspections

Figure 8: Sector-by-sector comparison of satisfactory inspection ratings for the operating performance SCA, 2019 to 2023

	2019	2020	2021	2022	2023
Medical	155	41	97	88	75
Industrial	409	225	318	368	435
Academic and research	70	9	22	35	71
Commercial	38	17	26	30	47
All sectors combined	672	292	463	521	628

Number or inspections with a satisfactory rating

Figure 9: Sector-by-sector comparison of satisfactory inspection ratings for the operating performance SCA, 2023 versus the 5-year average (2019 to 2023)



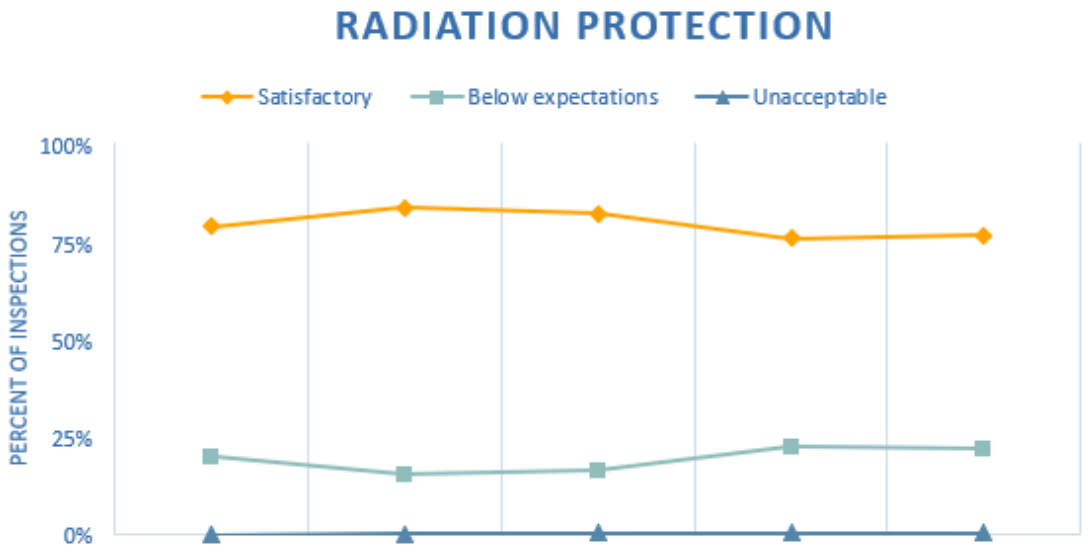
F3: Radiation protection

Of the 763 inspections that looked at the radiation protection SCA, 77% of the licensees inspected demonstrated that adequate processes and programs were in place to achieve their safety objectives and therefore received satisfactory ratings (figures 10 and 11). Figure 12 compares the 2023 ratings to the 5-year average by sector.

There were 4 unacceptable ratings issued in this SCA. All 4 were issued to licensees in the industrial sector: 3 in the portable gauge subsector and 1 in the industrial radiography subsector. Orders 1023, 1015, 1657 and 604 were issued in response to these findings.

Additional details on these orders can be found in appendix H. All orders have been closed to the satisfaction of CNSC staff.

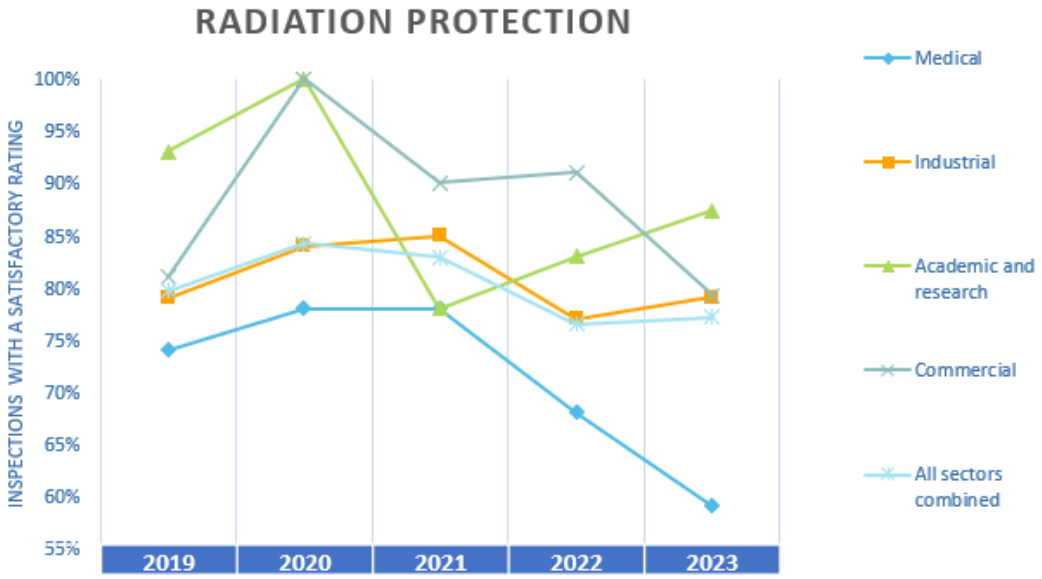
Figure 10: Inspection ratings for the radiation protection SCA, 2019 to 2023



	2019	2020	2021	2022	2023
Satisfactory	629	299	465	482	589
Below expectations	160	55	93	144	170
Unacceptable	1	1	3	4	4
Total	790	355	561	630	763

Number of inspections

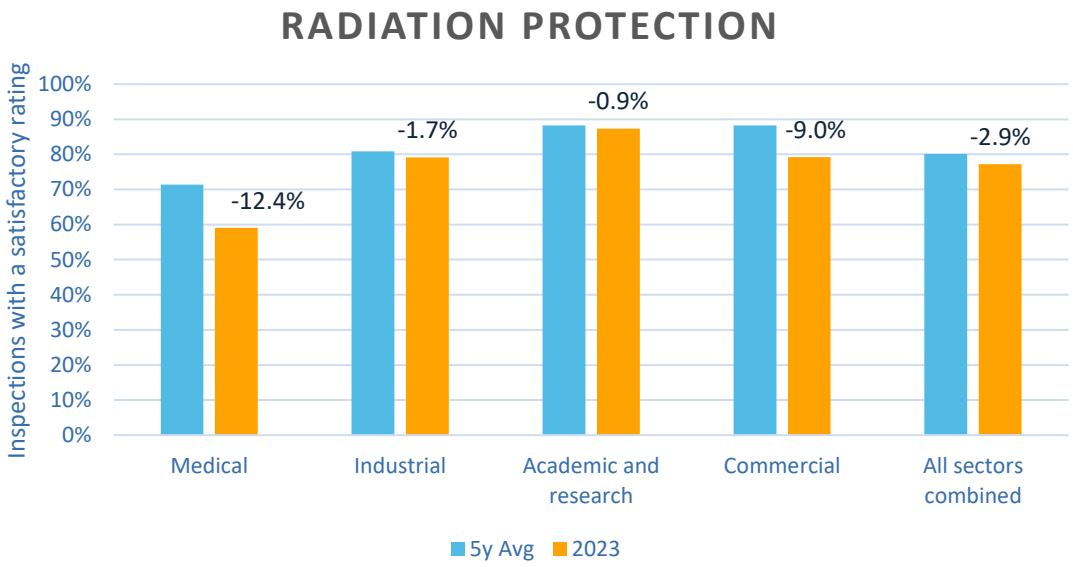
Figure 11: Sector-by-sector comparison of satisfactory inspection ratings for the radiation protection SCA, 2019 to 2023



	2019	2020	2021	2022	2023
Medical	132	42	113	80	62
Industrial	387	227	308	343	416
Academic and research	71	9	18	29	69
Commercial	39	21	26	30	42
All sectors combined	629	299	465	482	589

Number or inspections with a satisfactory rating

Figure 12: Sector-by-sector comparison of satisfactory inspection ratings for the radiation protection SCA, 2023 versus the 5-year average (2019 to 2023)



F4: Security

Of the 714 inspections that looked at the security SCA, 92% of the licensees inspected demonstrated that adequate processes and programs were in place to achieve their safety objectives and therefore received satisfactory ratings (figures 13 and 14). Figure 15 compares the 2023 ratings to the 5-year average by sector. The marked increase in the number of inspections of this SCA is directly related to the return to in-person inspections.

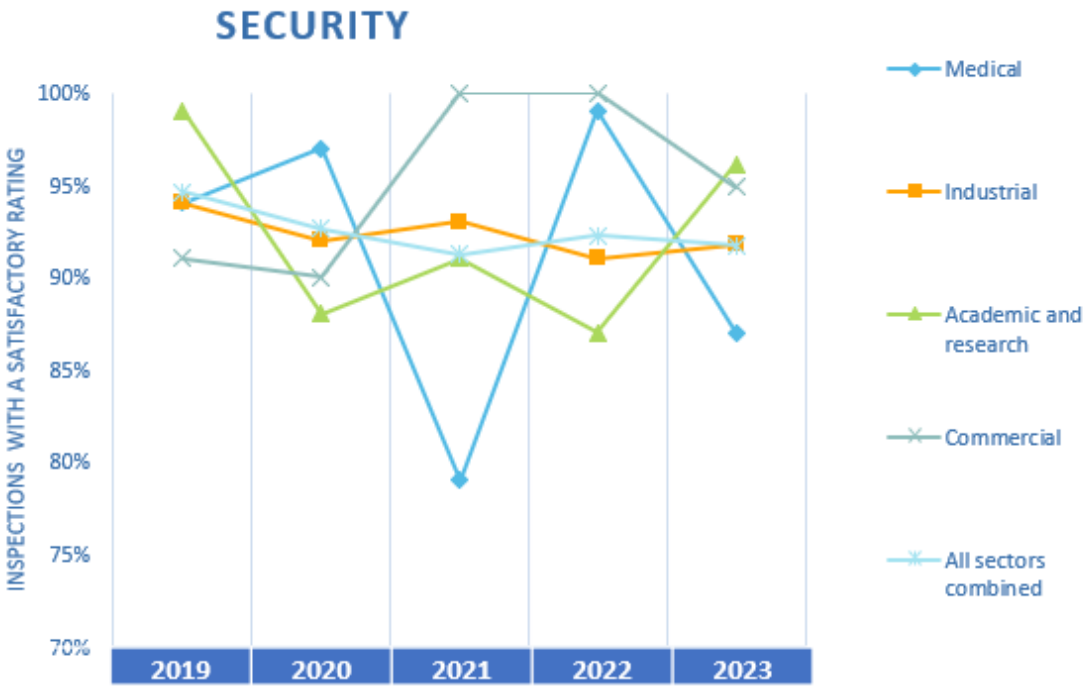
There was 1 unacceptable ratings in this SCA. Order 1169 was issued to a licensee in the portable gauge subsector in response to this inspection. Additional details on this order can be found in appendix H**.** The order has been closed to the satisfaction of CNSC staff.

Figure 13: Inspection ratings for the security SCA, 2019 to 2023

	2019	2020	2021	2022	2023
Satisfactory	719	163	208	463	655
Below expectations	41	13	19	39	58
Unacceptable	0	0	1	0	1
Total	760	176	228	502	714

Number of inspections

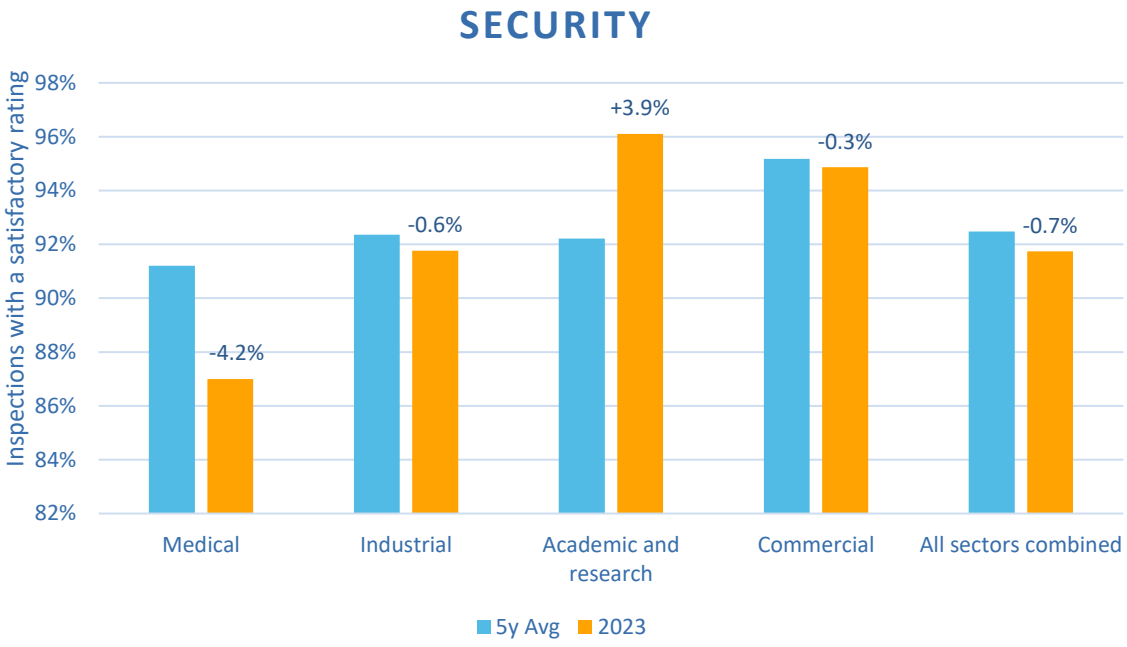
Figure 14: Sector-by-sector comparison of satisfactory inspection ratings for the security SCA, 2019 to 2023



	2019	2020	2021	2022	2023
Medical	158	31	27	80	87
Industrial	457	116	155	335	457
Academic and research	72	7	10	26	74
Commercial	32	9	16	22	37
All sectors combined	719	163	208	463	655

Number or inspections with a satisfactory rating

Figure 15: Sector-by-sector comparison of satisfactory inspection ratings for the security SCA, 2023 versus the 5-year average (2019 to 2023)



F5: Environmental protection and conventional health and safety

This environmental protection and conventional health and safety SCAs are only reported on in this report for the WNSL. Over the last 5 years, all WNSL have consistently received satisfactory ratings in both of these SCAs.

Table 5: Percentage of waste nuclear substance licensees with satisfactory ratings in the environmental protection and conventional health and safety SCAs, 2019 to 2023

SCA	2019	2020	2021	2022	2023
Environmental protection	100%	100%	100%	100%	100%
Conventional health and safety	100%	100%	100%	100%	100%

Appendix G: Inspection ratings by sector

This section provides data at the sector and subsector levels for each of the 4 key SCAs covered in this report. Any significant findings at the SCA level have been further explained in section 5 of this report, where additional analysis is included for the management system, operating performance, radiation protection and security SCAs. Given the small number of WNSLs, specific data related to the environmental protection and the conventional health and safety SCAs are not included in this section.

A breakdown by subsector is not provided for the security SCA, given the potentially sensitive information associated with that SCA.

G1: Medical sector

Tables 6 to 9 show the inspection performance of licensees in the medical sector. Subsector performance for the years 2019 to 2023 is shown as a percentage of the inspections that received satisfactory ratings for the SCA. The total number of inspections conducted to assess performance in the SCA appears in parentheses. The number of inspections shown in the "Entire medical sector" row is the aggregate for the entire sector, including subsectors not highlighted.

Table 6: Management system – Percentage of inspections with satisfactory ratings (and number of inspections conducted) for the medical sector and selected subsectors, 2019 to 2023

SCA	Subsector / sector	2019	2020	2021	2022	2023
Management system	Nuclear medicine	95% (103)	94% (47)	99% (89)	97% (76)	99% (75)
Management system	Radiation therapy	100% (4)	0% (1)	70% (10)	100% (9)	67% (3)
Management system	Veterinary nuclear medicine	75% (4)	(0)	100% (3)	100% (7)	100% (5)
Management system	Entire medical sector	95% (163)	92% (48)	96% (105)	98% (95)	98% (89)

There was an apparent drop in the performance of radiation therapy licensees in this SCA; however, with the small number of inspections performed, staff cannot conclude that this is

representative of the subsector as a whole given that this decrease was the result of only a single inspection that received a rating of below expectations.

Table 7: Operating performance – Percentage of inspections with satisfactory ratings (and number of inspections conducted) for the medical sector and selected subsectors, 2019 to 2023

SCA	Subsector / sector	2019	2020	2021	2022	2023
Operating performance	Nuclear medicine	87% (155)	77% (48)	83% (89)	84% (76)	81% (75)
Operating performance	Radiation therapy	100% (21)	100% (2)	90% (10)	100% (15)	50% (4)
Operating performance	Veterinary nuclear medicine	100% (3)	100% (1)	100% (3)	75% (8)	100% (6)
Operating performance	Entire medical sector	88% (176)	77% (51)	84% (115)	85% (103)	82% (91)

There was an apparent drop in the performance of radiation therapy licensees in this SCA; however, with the small number of inspections performed, staff cannot conclude that this is representative of the subsector as a whole given that this decrease was the result of only 2 inspections that received ratings of below expectations.

Table 8: Radiation protection – Percentage of inspections with satisfactory ratings (and number of inspections conducted) for the medical sector and selected subsectors, 2019 to 2023

SCA	Subsector / sector	2019	2020	2021	2022	2023
Radiation protection	Nuclear medicine	70% (155)	73% (48)	75% (119)	63% (91)	54% (89)
Radiation protection	Radiation therapy	100% (13)	100% (2)	100% (20)	93% (15)	100% (4)
Radiation protection	Veterinary nuclear medicine	100% (3)	100% (1)	33% (3)	63% (8)	67% (6)
Radiation protection	Entire medical sector	74% (178)	76% (51)	78% (145)	68% (118)	59% (105)

The nuclear medicine subsector demonstrated lower performance in the radiation protection SCA once again in comparison to previous years, although ratings have been consistently low over the last 5 years. The most frequent items of non-compliance in 2023 included the ascertainment and recording of doses (specifically related to new requirements in the *Radiation Protection Regulations* for extremity dosimetry), those related to radiation detection equipment and those related to thyroid monitoring requirements. These items are related to inadequate management oversight in the implementation of the radiation protection program. Additional details on this sector were provided to the Commission in May 2024 (CMD 24-M23). CNSC staff continue to work with these licensees to correct items of non-compliance and to work on program deficiencies. Staff will be prioritizing nuclear medicine inspections over other medium risk inspections in 2024.

Table 9: Security – Percentage of inspections with satisfactory ratings (and number of inspections conducted) for the medical sector, 2019 to 2023

SCA	Sector	2019	2020	2021	2022	2023
Security	Medical sector	94% (168)	97% (33)	79% (34)	99% (81)	87% (100)

G2: Industrial sector

Tables 10 to 13 show the inspection performance of licensees in the industrial sector. Subsector performance for the years 2019 to 2023 is shown as a percentage of the inspections that received satisfactory ratings for the SCA. The total number of inspections conducted to assess performance in the SCA appears in parentheses. The number of inspections for the "Entire industrial sector" row is the aggregate for the entire sector, including subsectors not highlighted.

A breakdown by subsector is not provided for the security SCA, given the potentially sensitive information associated with that SCA.

Table 10: Management system – Percentage of inspections with satisfactory ratings (and number of inspections conducted) for the industrial sector and selected subsectors, 2019 to 2023

SCA	Subsector / sector	2019	2020	2021	2022	2023
Management system	Portable gauge	100% (215)	98% (92)	96% (171)	98% (207)	99% (249)
Management system	Fixed gauge	94% (124)	94% (94)	98% (64)	98% (91)	96% (139)
Management system	Industrial radiography	98% (114)	98% (66)	99% (82)	98% (108)	97% (98)
Management system	Oil-well logging	100% (24)	89% (9)	93% (15)	100% (23)	90% (21)
Management system	Entire industrial sector	98% (487)	96% (261)	97% (340)	98% (437)	97% (511)

Table 11: Operating performance – Percentage of inspections with satisfactory ratings (and number of inspections conducted) for the industrial sector and selected subsectors, 2019 to 2023

SCA	Subsector / sector	2019	2020	2021	2022	2023
Operating performance	Portable gauge	82% (98)	89% (192)	82% (210)	82% (210)	84% (259)
Operating performance	Fixed gauge	71% (94)	72% (64)	67% (91)	67% (91)	74% (140)
Operating performance	Industrial radiography	98% (66)	95% (82)	95% (107)	95% (107)	93% (98)
Operating performance	Oil-well logging	100% (9)	100% (14)	88% (24)	88% (24)	90% (21)
Operating performance	Entire industrial sector	82% (267)	88% (363)	83% (444)	83% (444)	83% (524)

While the fixed gauge subsector has seen a reversal of performance trending for the first time in 5 years seeing an increase of 7% compared to 2022 while doing more inspections over the course of the year. Non-compliances related to workers not following procedures specifically in

relation to vessel entry continued to be an issue for this subsector. As a reminder to licensees in this subsector, in early 2023, as part of a wider DNSR Digest article that discussed the most common non compliances by sector, staff re-shared a detailed checklist on vessel entry. Additional non-compliances related to licensees not performing or recording activities committed to in their radiation safety manuals including internal audits, leak testing and shutter verification checks. While staff continue to prioritize inspections for medium-risk licensees, such as those in the fixed gauge subsector, the current focus is on those licensees that are overdue for an inspection. Staff are satisfied with this prioritization, as most non-compliances are not serious in nature.

Table 12: Radiation protection – Percentage of inspections with satisfactory ratings (and number of inspections conducted) for the industrial sector and selected subsectors, 2019 to 2023

SCA	Subsector / sector	2019	2020	2021	2022	2023
Radiation protection	Portable gauge	74% (216)	83% (98)	81% (192)	71% (210)	75% (261)
Radiation protection	Fixed gauge	73% (124)	82% (94)	80% (64)	74% (91)	77% (140)
Radiation protection	Industrial radiography	92% (114)	86% (66)	93% (82)	89% (108)	90% (98)
Radiation protection	Oil-well logging	92% (24)	89% (9)	93% (14)	87% (23)	81% (21)
Radiation protection	Entire industrial sector	79% (483)	84% (267)	85% (364)	77% (444)	79% (526)

Performance remained relatively stable across all subsectors compared to 2022. The most frequent non-compliances in 2023 were related to survey meter availability, meter calibration and overall oversight of the radiation protection program. As mentioned previously, while staff continue to prioritize inspections for medium-risk licensees, such as those in the fixed and portable gauge subsectors, the current focus is on those licensees that are overdue for an inspection.

Table 13: Security – Percentage of inspections with satisfactory ratings (and number of inspections conducted) for the industrial sector, 2019 to 2023

SCA	Sector	2019	2020	2021	2022	2022
Security	Industrial sector	94% (484)	92% (122)	93% (167)	91% (369)	92% (498)

G3: Academic and research sector

Tables 14 to 17 show the inspection performance of licensees in the academic and research sector. Subsector performance for the years 2019 to 2023 is shown as a percentage of the inspections that received satisfactory ratings for the SCA. The total number of inspections conducted to assess performance in the SCA appears in parentheses. The number of inspections for the "Entire academic and research sector" row is the aggregate for the entire sector, including subsectors not highlighted.

A breakdown by subsector is not provided for the security SCA, given the potentially sensitive information associated with that SCA.

Table 14: Management system – Percentage of inspections with satisfactory ratings (and number of inspections conducted) for the academic and research sector and 1 selected subsector, 2019 to 2023

SCA	Subsector / sector	2019	2020	2021	2022	2023
Management system	Laboratory studies and consolidated use	99% (74)	100% (9)	100% (16)	97% (32)	93% (75)
Management system	Entire academic and research sector	99% (74)	100% (9)	100% (18)	97% (34)	96% (77)

Table 15: Operating performance – Percentage of inspections with satisfactory ratings (and number of inspections conducted) for the academic and research sector and 1 selected subsector, 2019 to 2023

SCA	Subsector / sector	2018	2019	2020	2021	2023
Operating performance	Laboratory studies and consolidated use	95% (74)	89% (9)	94% (16)	100% (32)	91% (74)
Operating performance	Entire academic and research sector	95% (74)	90% (10)	96% (23)	97% (36)	91% (78)

While there has been a drop in performance in this SCA since 2022, the performance in this SCA in 2023 is consistent with previous years and remains high. Non-compliances identified were mainly related to not performing or not documenting annual leak tests, refresher training and internal audits.

Table 16: Radiation protection – Percentage of inspections with satisfactory ratings (and number of inspections conducted) for the academic and research sector and 1 selected subsector, 2019 to 2022

SCA	Subsector / sector	2019	2020	2021	2022	2023
Radiation protection	Laboratory studies and consolidated use	93% (74)	100% (10)	69% (16)	84% (32)	88% (75)
Radiation protection	Entire academic and research sector	93% (74)	100% (10)	78% (23)	83% (35)	87% (79)

Table 17: Security – Percentage of inspections with satisfactory ratings (and number of inspections conducted) for the academic and research sector, 2019 to 2023

SCA	Sector	2019	2020	2021	2022	2023
Security	Academic and research sector	99% (73)	100% (7)	91% (11)	87% (30)	96% (77)

G4: Commercial sector

Table 18 shows the inspection performance of licensees in the commercial sector. The performance of the sector for the years 2019 to 2023 is shown as a percentage of the inspections that received satisfactory ratings for the SCA. The total number of inspections conducted to assess performance in the SCA appears in parentheses. The number of inspections for the commercial sector is the aggregate for the entire sector.

In light of the small number of inspections in each subsector, a breakdown by subsector is not provided. It would be difficult to identify trends in the subsectors given the low number of licensees in many of them.

Table 18: Percentage of inspections with satisfactory ratings (and number of inspections conducted) for the commercial sector, 2019 to 2023

SCA	2019	2020	2021	2022	2023
Management system	97% (40)	100% (14)	92% (26)	94% (31)	96% (50)
Operating performance	89% (36)	94% (18)	87% (30)	91% (33)	89% (53)
Radiation protection	83% (48)	100% (21)	90% (29)	91% (33)	79% (53)
Security	91% (35)	90% (10)	100% (16)	100% (22)	95% (39)

There has been a drop in performance in the radiation protection SCA. The most common non-compliances included issues related to ascertainment and recording of doses, posting of signs, and radiation monitoring equipment.

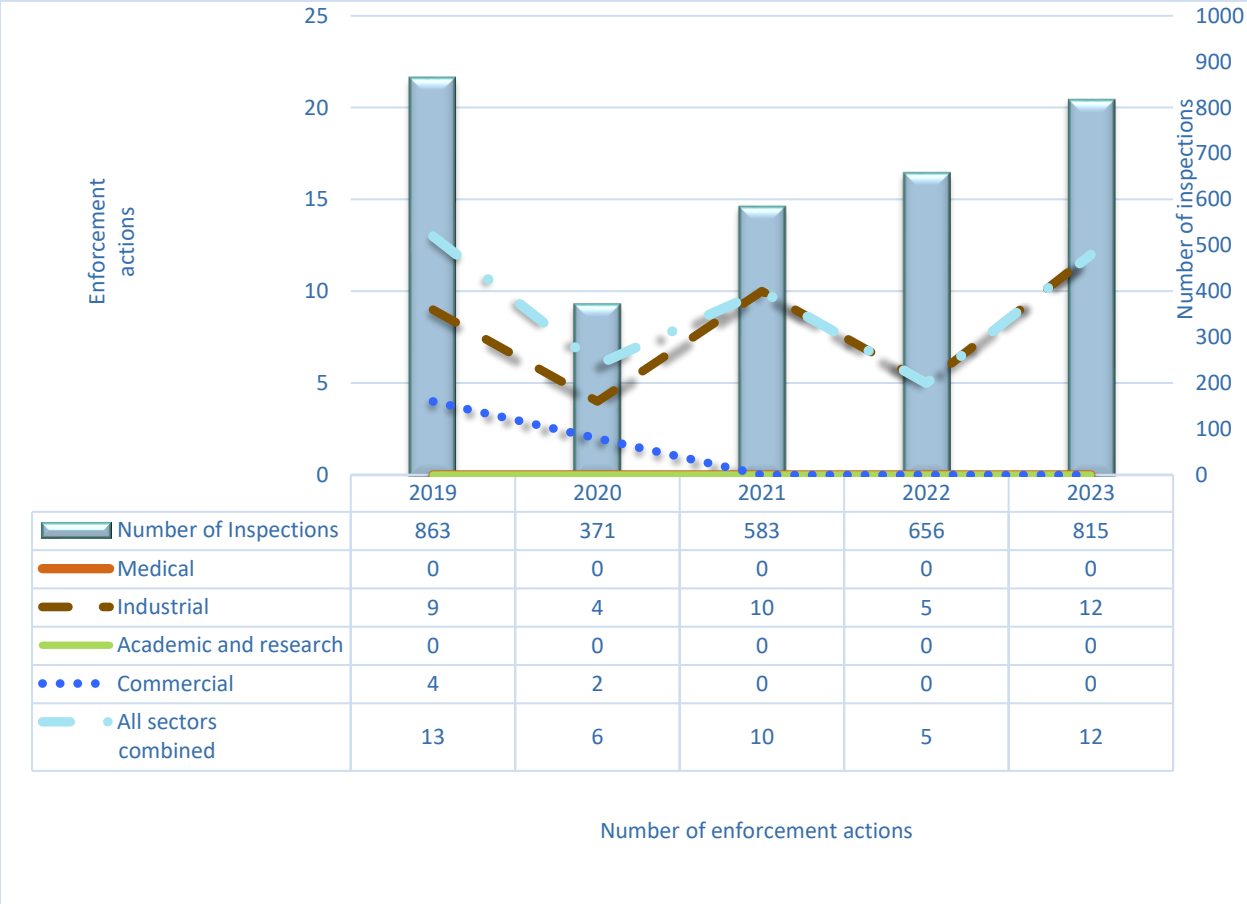
Appendix H: Enforcement actions issued in 2023

In 2023, CNSC staff issued 9 orders and 3 administrative monetary penalties (AMPs) to licensees. All enforcement actions were issued to licensees in the industrial sector. This is consistent with previous years, in which most, if not all, enforcement actions were issued in that sector.

A complete list of orders and AMPs issued is included in tables 19 and 20 respectively. All enforcement actions issued have been closed, and the CNSC is satisfied that the licensees have addressed the conditions of the orders.

Additional information is available in section 6 of this report.

Figure 16: Sector-by-sector comparison of enforcement actions issued, 2019 to 2023



	2019	2020	2021	2022	2023
Number of Inspections	863	371	583	656	815
Medical	0	0	0	0	0
Industrial	9	4	10	5	12
Academic and research	0	0	0	0	0
Commercial	4	2	0	0	0
All sectors combined	13	6	10	5	12

Table 19: Orders issued in 2023

Date of issue	Order #	Location	Licensee	Subsector / sector	Order summary	Licensee response	Status
2023-01-05	601	155 Industrial Rd 3, Sparwood, BC	MDG Contracting Services Inc.	Fixed gauge - industrial	The order was issued following a CNSC on-site records inspection conducted. On January 5, 2023 where it was determined that the licensee had improperly prepared a package for transport.	The licensee has complied with the terms of the order to the satisfaction of the CNSC.	Closed on 2023-01-09
2023-02-14	1303	374681 County Road 6, Ingersoll, ON	Carmeuse Lime (Canada) Limited	Fixed gauge - industrial	While conducting a routine compliance inspection of the licensee on February 14, 2023, an order was issued where CNSC staff identified significant gaps in records reviewed related to radiation device lockouts and vessel/hopper entries performed. Training and dose ascertainment records related to vessel/hopper entry activities were also found to be incomplete. There were no records indicating that a calibrated survey meter was used during lockouts. It was also determined that the RSO was not adequately trained to manage the radiation safety program.	The licensee has complied with the terms of the order to the satisfaction of the CNSC.	Closed on 2023-06-23

Date of issue	Order #	Location	Licensee	Subsector / sector	Order summary	Licensee response	Status
2023-02-27	604	28, 2333 18 Avenue NE, Calgary, AB	PrairieGeo Engineering Ltd.	Portable gauge - industrial	During a compliance inspection of this licensee, several items of non-compliance were cited related to deficiencies in dose estimation, survey meter calibrations, leak testing records, lack of prescribed records and transport related non-compliances. Based on the number and severity of the non-compliances identified as well as inadequate management oversight and control over the radiation protection program an order was issued by CNSC staff requiring the licensee to keep all portable gauges in storage until such time as all item of non-compliance have been addressed to the satisfaction of the CNSC.	The licensee has complied with the terms of the order to the satisfaction of the CNSC.	Closed on 2023-03-03

Date of issue	Order #	Location	Licensee	Subsector / sector	Order summary	Licensee response	Status
2023-03-15	1657	4570 14 Street NE, Calgary, AB	AR Geotechnical Engineering Ltd	Portable gauge - industrial	The order was issued following a CNSC on-site records inspection conducted on March 15, 2023 in which several items of non-compliance were identified indicating a lack of management control of the licensee's radiation safety program. The non-compliances were related to deficiencies in dose estimation, survey meter calibrations, leak testing records, lack of prescribed records and transport related non-compliances.	The licensee has complied with the terms of the order to the satisfaction of the CNSC.	Closed on 2023-04-18
2023-03-29	1145	300 Union St, Saint John, NB	Irving Paper Limited	Fixed gauge - industrial	The order was issued following a CNSC on-site records inspection conducted on March 29, 2023. During the inspection CNSC staff identified gaps in the licensee's radiation safety program specifically with respect to management oversight, control of occupational exposure and personnel training for entries into vessels fitted with radiation devices.	The licensee has complied with the terms of the order to the satisfaction of the CNSC.	Closed on 2023-05-28

Date of issue	Order #	Location	Licensee	Subsector / sector	Order summary	Licensee response	Status
2023-07-27	1023	6711 Golden West Avenue, Red Deer, AB	Border Paving Ltd.	Portable gauge - industrial	The order was issued following a CNSC on-site records inspection where it was determined that the licensee had failed to implement corrective actions based on notices of non-compliances from a previous inspection. Additional non-compliances were identified including the licensee not being able to provide prescribed records, lack of a survey meter, and lack of required training records.	The licensee has complied with the terms of the order to the satisfaction of the CNSC.	Closed on 2023-08-31
2023-09-28	1015	7108 - 8 Street NW, Edmonton, AB	Nortech Advanced NDT Ltd.	Industrial radiography - industrial	An order was issued following a CNSC on-site inspection where it was determined that the exposure device operator was not trained in the licensee's procedures nor operating safely.	The licensee has complied with the terms of the order to the satisfaction of the CNSC.	Closed on 2023-10-23
2023-09-29	1169	17, rue de l'Industrie	Groupe ABS	Portable gauge - industrial	The order was issued following a CNSC field inspection at a construction site in Montréal, where it was observed that a worker had left a portable nuclear gauge unattended and unsecured. In addition, the inspection identified that the worker was not following internal procedures and was not adequately trained.	The licensee has complied with the terms of the order to the satisfaction of the CNSC.	Closed on 2023-10-26

Date of issue	Order #	Location	Licensee	Subsector / sector	Order summary	Licensee response	Status
2023-11-15	1168	69 Yonge Street, Toronto, ON	Impala Canada Ltd	Fixed gauge - industrial	While conducting a routine compliance inspection of the licensee on November 15, 2023, an order was issued after it was found that the Radiation Safety Officer was not aware of vessel entries performed in 2023. CNSC staff further identified significant gaps in records available related to vessel/hopper entries performed. It was also determined that the RSO had failed to maintain adequate oversight of the radiation protection program and that the workers were not adequately trained.	The licensee has complied with the terms of the order to the satisfaction of the CNSC.	Closed on 2024-01-08

Table 20: Administrative monetary penalties issued in 2023

Date of issue	AMP	Licensee	Subsector / sector	Amount	AMP description	Closed
2023-03-23	AMP-01 2023	Metalogic Inspection Services	Industrial radiography - industrial	$31,690	Failure to comply with a licence condition in violation of paragraph 48 (c) of the Nuclear Safety and Control Act. Failure to comply with a condition of the licence. Specifically, failure to comply with licence condition 2490-3 related to security measures of sealed sources.	Paid on 2024-01-03

Date of issue	AMP	Licensee	Subsector / sector	Amount	AMP description	Closed
2023-07-25	AMP-03-2023	Canadian Natural Resources Limited	Fixed gauge - industrial	$8,000	Failure to comply with a condition of a licence in violation of Section 48(c) of the Nuclear Safety and Control Act. Failure to comply with a condition of the licence. Specifically, failure to comply with licence condition 2052-3 related to entry into a vessel or hopper fitted with a fixed gauge.	Paid on 2023-08-29
2023-12-21	AMP-05-2023	Canadian Forest Products Ltd	Fixed gauge - industrial	$2,000	Failure to comply with a condition of a licence in violation of Section 48(c) of the Nuclear Safety and Control Act. Failure to comply with a condition of the licence. Specifically, failure to comply with licence condition 2052-3 related to entry into a vessel or hopper fitted with a fixed gauge.	Paid on 2024-01-25

Appendix I: Effective doses to workers

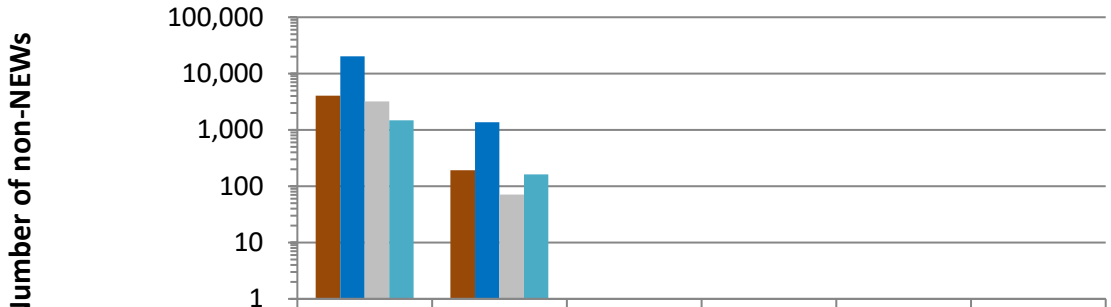
Occupational effective doses were reported by licensees for a total of 52,550 workers in the 4 sectors in 2023. Of those workers, 21,917 were nuclear energy workers (NEWs). The difference in effective doses to workers among sectors reflects the nature of the various activities within those sectors. Figure 17 shows the effective doses received by non-NEWs reported in 2023, with 94% reported as having received doses less than or equal to 0.5 mSv. Figure 18 shows the effective doses received by NEWs reported in 2023. Based on the reported doses for NEWs, only about 19% received a dose greater than 1 mSv, 88% received a dose of less than or equal to 2 mSv and less than 1.5% received a dose above 5 mSv.

To further increase the granularity of dose reporting, CNSC staff have updated the annual compliance report forms to subdivide the 1–5 mSv effective dose category into 1–2 mSv and 2–5 mSv categories. In the past, we have included a graph showing the annual effective doses to NEWs, over 5 years, but due to this change, we no longer have the same data to compare. Moving forward, this comparison will be re-introduced once we have 2 or more years of data to compare.

As the figures demonstrate, effective doses overall are low. Previous year-over-year trending showed this was consistent across the years. This is an indication that industry has successfully kept doses as low as reasonably achievable. Given the nature of the work performed in many cases, it is inevitable that some workers will receive a dose. The consistency year over year indicated that effective doses have likely achieved a state of equilibrium – changes in operational procedures will likely not yield any significant improvements. When this comparison is re-introduced in future reports, with the new reporting categories, it is anticipated that this state of equilibrium will once again be demonstrated.

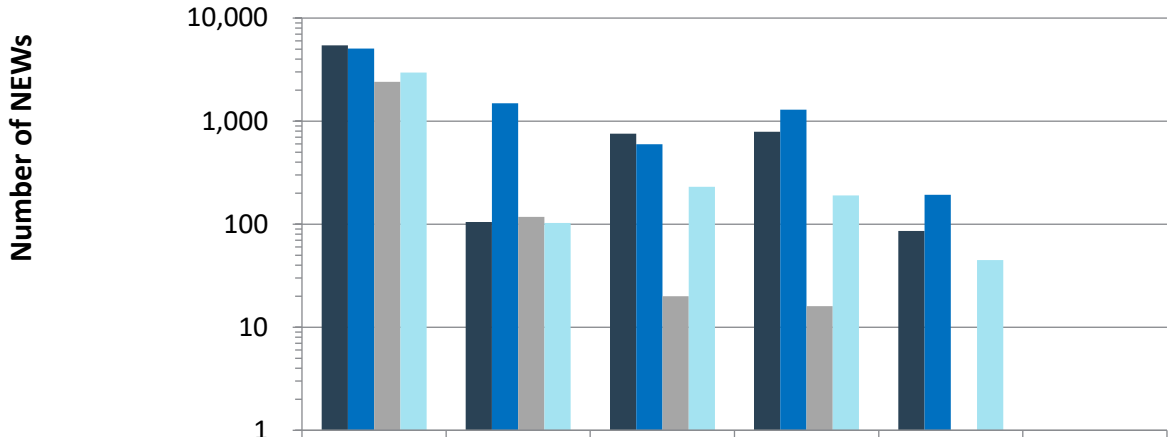
More information on effective doses is provided in section 7 of this report.

Figure 17: Sector-by-sector comparison of annual effective doses to all non-NEWs reported by licensees in 2023



	<= 0.5mSv	>0.5 mSv and <= 1mSv	>1 mSv and <= 2 mSv	>2 mSv and <= 5 mSv	> 5 mSv and <= 20 mSv	> 20 mSv
Medical	4,069	192	0	0	0	0
Industrial	20,112	1,369	0	0	0	0
Academic and research	3,185	71	0	0	0	0
Commercial	1,473	162	0	0	0	0

Figure 18: Sector-by-sector comparison of annual effective doses to all NEWs reported by licensees in 2023

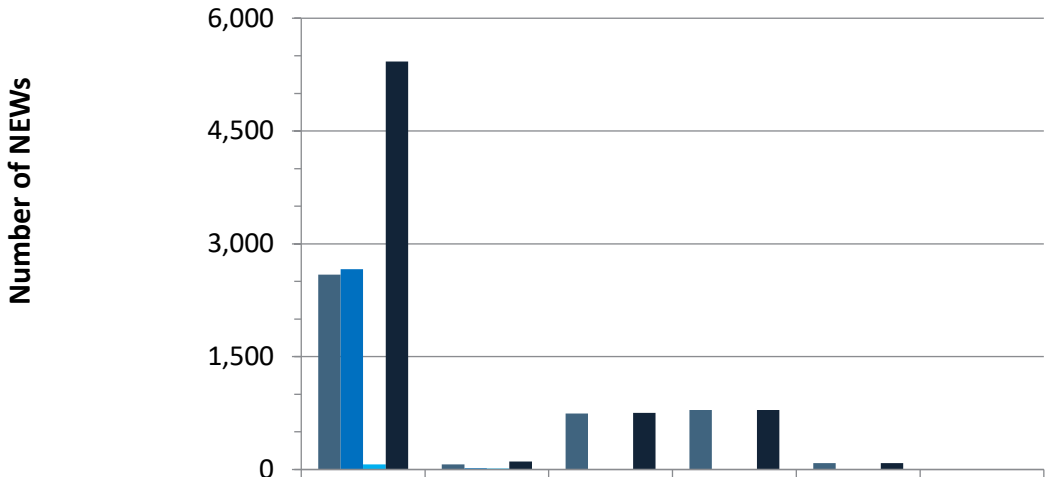


	<= 0.5mSv	>0.5 mSv and <= 1mSv	>1 mSv and <= 2 mSv	>2 mSv and <= 5 mSv	> 5 mSv and <= 20 mSv	> 20 mSv
Medical	5,424	105	755	791	86	0
Industrial	5,074	1,489	598	1,294	193	0
Academic and research	2,414	118	20	16	1	0
Commercial	2,970	103	231	190	45	0

I1: Medical sector

Figure 19 shows the effective doses received by NEWs in the medical sector, as reported to the CNSC for 2023. Note that the total number of NEWs shown in the “Medical sector” row is the aggregate for the entire sector, including subsectors not highlighted.

Figure 19: Reported effective doses to NEWs in the medical sector (selected subsectors and entire

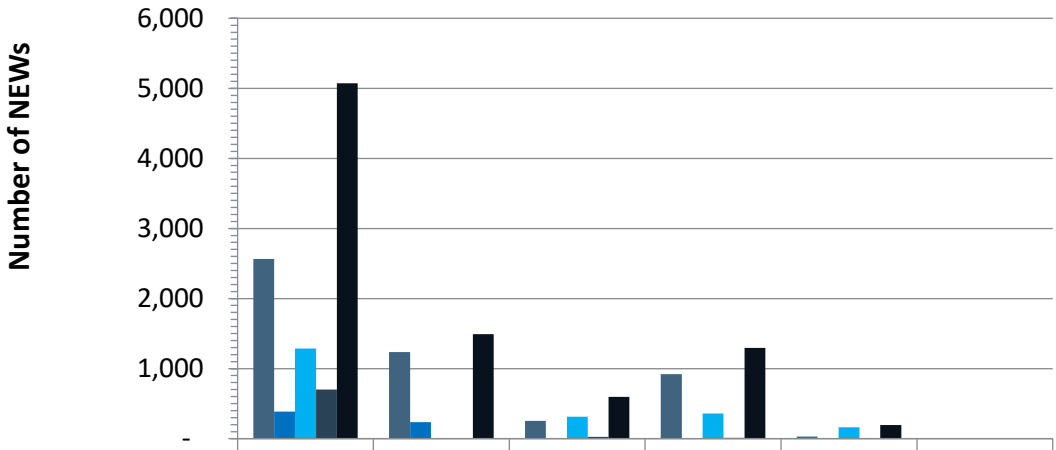


	<= 0.5mSv	>0.5 mSv and <= 1mSv	>1 mSv and <= 2 mSv	>2 mSv and <= 5 mSv	> 5 mSv and <= 20 mSv	> 20 mSv
Nuclear medicine	2,589	70	743	790	85	0
Radiation therapy	2,662	15	6	1	0	0
Veterinary nuclear medicine	70	14	6	0	0	0
Medical sector	5,424	105	755	791	86	0

I2: Industrial sector

Figure 20 shows the effective doses received by NEWs in the industrial sector, as reported to the CNSC for 2023. Note that the total number of NEWs shown in the “Industrial sector” row is the aggregate for the entire sector, including subsectors not highlighted.

Figure 20: Reported effective doses to NEWs in the industrial sector (selected subsectors and entire sector), 2023

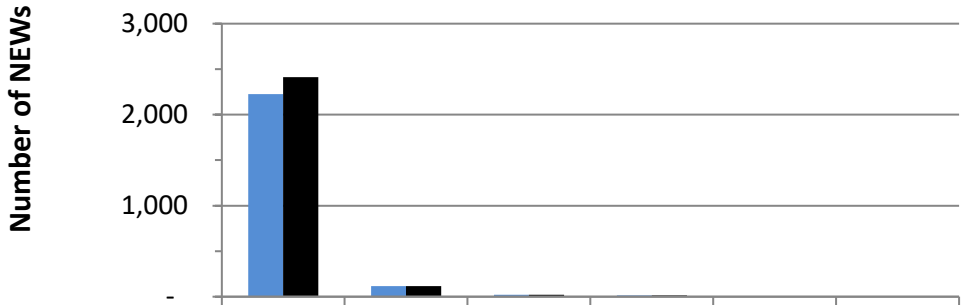


	<= 0.5mSv	>0.5 mSv and <= 1mSv	>1 mSv and <= 2 mSv	>2 mSv and <= 5 mSv	> 5 mSv and <= 20 mSv	> 20 mSv
Portable gauge	2,564	1,234	254	920	29	0
Fixed gauge	386	235	4	3	1	0
Industrial radiography	1,284	4	313	360	162	0
Oil well logging	702	1	23	11	1	0
Industrial sector	5,074	1,489	598	1,294	193	0

I3: Academic and research sector

Figure 21 shows the effective doses received by NEWs in the academic and research sector, as reported to the CNSC for 2023. Note that the total number of NEWs shown in the “Academic and research sector” row is the aggregate for the entire sector, including subsectors not highlighted.

Figure 21: Reported effective doses to NEWs in the academic and research sector (selected subsector and entire sector), 2023

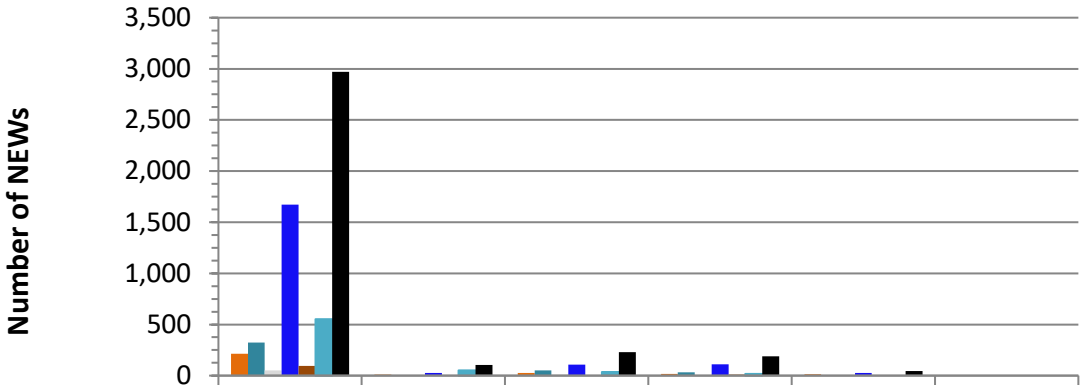


	<= 0.5mSv	>0.5 mSv and <= 1mSv	>1 mSv and <= 2 mSv	>2 mSv and <= 5 mSv	> 5 mSv and <= 20 mSv	> 20 mSv
Laboratory studies and consolidated use of nuclear substances	2,225	116	20	16	1	0
Academic and research sector	2,414	118	20	16	1	0

I4: Commercial sector

Figure 22 shows the effective doses received by NEWs in the commercial sector, as reported to the CNSC for 2023. Note that the total number of NEWs shown in the “Commercial sector” row is the aggregate for the entire sector, including subsectors not highlighted.

Figure 22: Reported effective doses to NEWs in the commercial sector (selected subsectors and entire sector), 2023

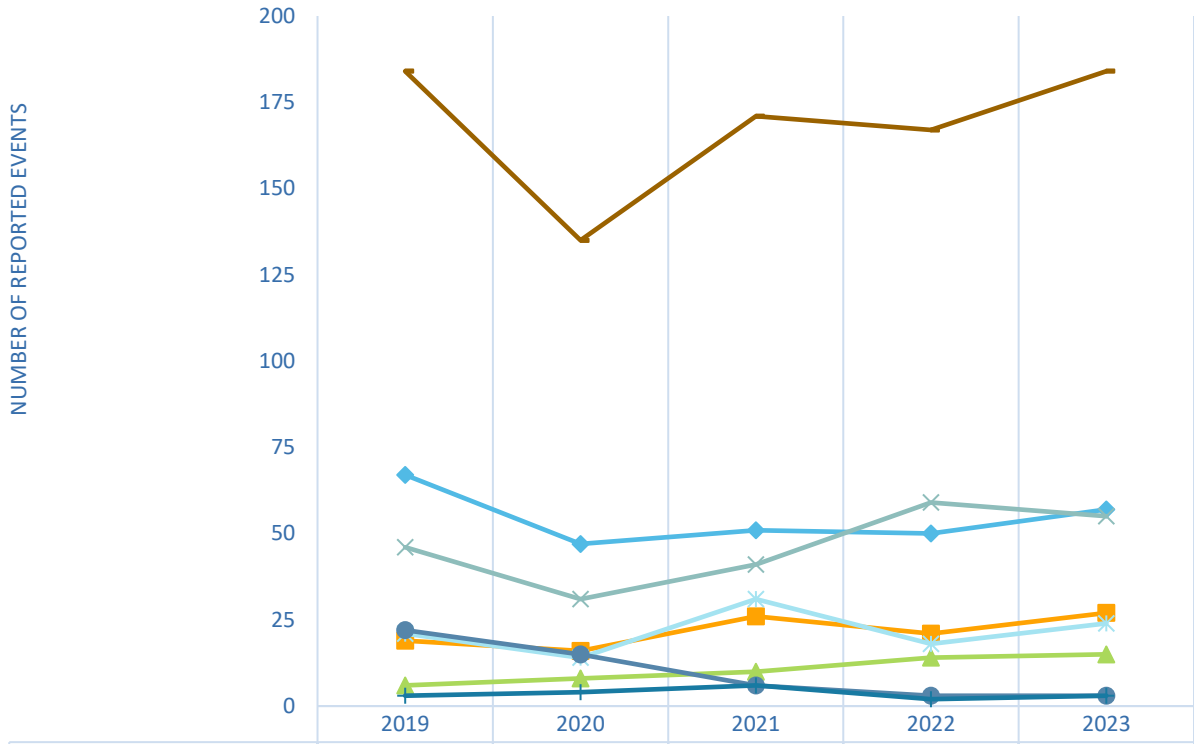


	<= 0.5mSv	>0.5 mSv and <= 1mSv	>1 mSv and <= 2 mSv	>2 mSv and <= 5 mSv	> 5 mSv and <= 20 mSv	> 20 mSv
Isotope production	213	10	27	17	15	0
Processing of nuclear substances	323	0	50	32	2	0
Distribution	50	0	7	4	1	0
Servicing	1,672	27	106	111	26	0
Calibration	96	5	2	9	1	0
Waste nuclear substance	553	51	36	17	0	0
Commercial sector	2,970	103	231	190	45	0

Appendix J: Reportable events

In 2023, CNSC staff received 222 notifications from licensees of potential events related to nuclear substances and prescribed equipment. Staff considered 184 of these to be reportable events. Notifications not considered reportable events included such things as action level exceedances, successful fishing operations (well-logging), bankruptcy and potential work disruptions. Of the 184 reportable events, 181 were rated as level 0 (no safety significance) on the International Nuclear and Radiological Event Scale (INES) and 3 were rated as INES level 1 (anomaly). For all events reported, licensees implemented appropriate response measures to mitigate the impacts and to limit radiation exposure to workers and the public. CNSC staff reviewed the response measures and found them to be satisfactory. Figure 23 shows the 5-year trend for different types of events, tables 21 to 25 show event data by sector and subsector for each type of reportable event, and table 26 provides a summary of all reportable events. Additional information on reportable events is provided in section 8.

Figure 23: Reportable events from 2019 to 2023, all sectors combined



	2019	2020	2021	2022	2023
Malfunctioning or damaged devices	67	47	51	50	57
Spills, contamination or release	19	16	26	21	27
Lost, stolen, found or abandoned nuclear substances	6	8	10	14	15
Packaging and transport	46	31	41	59	55
Breach of security	21	14	31	18	24
Unplanned exposure	22	15	6	3	3
Other	3	4	6	2	3
All reported events	184	135	171	167	184

Table 21: Commercial sector reportable events in 2023

There was a total of 48 reportable events in the commercial sector.

Subsector	Malfunctioning or damaged devices	Spills, contamination or release	Lost, stolen, found or abandoned nuclear substances	Packaging and transport	Breach of security	Unplanned exposure	Other
Isotope production	0	2	0	3	0	0	0
Processing of nuclear substances	0	9	1	13	1	0	0
Distribution	0	0	0	2	0	0	0
Servicing	1	0	0	0	0	0	0
Calibration	0	0	0	0	0	0	0
Waste nuclear substance	3	4	1	1	5	0	2
Other	0	0	0	0	0	0	0

Table 22: Medical sector reportable events in 2023

There was a total of 36 reportable events in the medical sector:

Subsector	Malfunctioning or damaged devices	Spills, contamination or release	Lost, stolen, found or abandoned nuclear substances	Packaging and transport	Breach of security	Unplanned exposure	Other
Nuclear medicine	0	8	6	1	2	0	0
Radiation therapy	6	0	1	0	10	0	0
Veterinary nuclear medicine	0	0	0	0	0	0	0
Other	0	0	0	0	2	0	0

Table 23: Industrial sector reportable events in 2023

There was a total of 92 reportable events in the industrial sector:

Subsector	Malfunctioning or damaged devices	Spills, contamination or release	Lost, stolen, found or abandoned nuclear substances	Packaging and transport	Breach of security	Unplanned exposure	Other
Portable gauge	20	0	3	32	1	0	0
Fixed gauge	19	0	0	1	0	0	1
Industrial radiography	6	0	0	2	1	3	0
Oil-well logging	0	0	2	0	1	0	0
Other	0	0	0	0	0	0	0

Table 24: Academic and research sector reportable events in 2023

There was a total of 8 reportable events in the academic and research sector:

Subsector	Malfunctioning or damaged devices	Spills, contamination or release	Lost, stolen, found or abandoned nuclear substances	Packaging and transport	Breach of security	Unplanned exposure	Other
Laboratory studies and consolidated use	2	4	1	0	0	0	0
Other	0	0	0	0	1	0	0

Table 25: Reportable events in all sectors in 2023

There was a total of 184 reportable events in all sectors combined:

All sectors combined	Malfunctioning or damaged devices	Spills, contamination or release	Lost, stolen, found or abandoned nuclear substances	Packaging and transport	Breach of security	Unplanned exposure	Other
Total events	57	27	15	55	24	3	3

Table 26: Reportable events in 2023

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
5798	2023-01-09	0	Breach of security	Medical	Radiation therapy	During a routine inspection, the licensee noticed that one (1) of the three (3) security cameras located in the irradiator room was out of service. The licensee immediately contacted a technician to service the camera. During the entire time, all other safety features were working and available.
5793	2023-01-10	0	Device malfunction	Industrial	Portable gauge	A licensee reported they had transported a portable gauge with a partially open shutter. To prevent recurrence of such situations, the licensee reminded their staff of the importance of radiation safety and proper safety checks regarding gauge operations prior to transporting a portable gauge. A mirror was made available to check the condition of the shutter. There were no overexposures as a result of this event.
5814	2023-01-15	0	Transport issue-motor vehicle collision (MVC)	Commercial	Processing of nuclear substances	A vehicle transporting 4 Type A packages containing used Mo-99/Tc-99m generators was involved in a minor collision while changing lanes on the highway. There was no damage to the packages.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
WNSL-1	2023-01-16	0	Breach of security	Commercial	Waste nuclear substance	The circumstances and corrective actions concerning this event involve protected information.
5816	2023-01-17	0	Device malfunction	Medical	Radiation therapy	A last person out (LPO) circuit, a safety parameter incorporating door closure, was not functioning properly due to a programming issue. The licensee distributed staff communications and posted signage to allow safe use of the impacted accelerator until reprogramming was completed.
5801	2023-01-20	0	Device damaged	Industrial	Fixed gauge	The licensee reported that the shutter mechanism on a fixed gauge was stuck in the open position. Due to the physical location of the radiation device, there was no threat of exposure to any workers. The shutter on the gauge was repaired by a service provider.
5815	2023-01-20	0	Transport issue	Industrial	Fixed gauge	A fixed gauge, attached to processing equipment, was inadvertently shipped to another company who bought the processing equipment at auction. The gauge, which should not have been sold at auction, was not properly packaged for transport. Upon discovery, the licensee contacted a third party to

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						arrange for the pick-up and proper storage of the gauge.
5802	2023-01-25	0	Spill	Commercial	Processing of nuclear substances	A spill greater than 100 exemption quantities (EQ) occurred when transferring Sr-82 from a column to shielded vials. The tubing connecting the column and the vials ruptured during the transfer. The licensee determined that an incorrect valve was used and remained closed instead of opening during the transfer. Several corrective actions were put in place by the licensee to prevent any recurrence. There was no personal contamination, no environmental release, and no overexposures as a result of this event.
5804	2023-01-25	0	Transport issue	Industrial	Portable gauge	A damaged Type A package containing a portable gauge was received by the licensee. The gauge was not damaged. The licensee notified the consignor and carrier as required.
5806	2023-01-29	0	Device malfunction	Industrial	Portable gauge	A licensed service provider received a portable gauge for servicing with a partially open shutter. The service provider was able to close the shutter. As part of the servicing, the service provider cleaned the shutter mechanism

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						so that it functioned properly. The consignor was informed of the issue as required. There were no overexposures as a result of this event.
5808	2023-02-02	0	Breach of security	Medical	Other	During an internal performance audit, the licensee discovered a malfunction with the room's intruder alarm whereby the local alarm was functional, but the security team was not alerted when the alarm sounded. The security team immediately implemented interim security measures until the alarm was fixed.
5809	2023-02-02	0	Lost	Medical	Diagnostic and therapeutic nuclear medicine	Two category 5 (very low risk) sealed sources (19 kBq of Eu-152 and 19 kBq of Cs-137) were lost. A worker in the receiving area, believing the package only contained packing material, emptied it into the garbage compactor. The garbage had already been compacted and collected by the waste service provider when the loss was noticed. The sources are buried at the landfill site. The nuclear medicine department has modified its procedures with regards to incoming shipments. There are no anticipated effects on

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						health and safety of persons or on the environment as a result of this event.
5823	2023-02-04	0	Transport issue	Commercial	Distribution	A Type A package containing a Mo-99/Tc-99m generator was damaged and found by the carrier to be unfit for air transport. The package was securely stored until the consignor picked it up for repacking. There was no loss of containment.
5810	2023-02-06	0	Device malfunction	Medical	Radiation therapy	During daily quality control measures, the licensee noted that several emergency stop buttons located in a radiation therapy room were not functioning although the ones on the device and on the console were still functional. The necessary repairs were confirmed as being completed.
5811	2023-02-06	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge was involved in a collision. The impact caused the portable gauge to be ejected from the back of the truck. There was no damage to the portable gauge. Employees were reminded to secure the transport package to the vehicle with a chain and lock during transport.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
WNSL-2	2023-02-06	0	Other	Commercial	Waste nuclear substance	A tool used in radiation Zone 2 was found outside the radiation protection control zone. For a period of time, it was unknown where the tool was. This event was caused by staff not following procedures. Corrective actions put in place included developing an inventory control system as well as checking the tool inventories at the end of each day.
WNSL-3	2023-02-06	0	Other	Commercial	Waste nuclear substance	A container removed from radiation Zone 3 contained radioactive waste when it was expected to be empty. Upon discovery of the waste, the bags within the container were returned to radiation Zone 3. The container was originally labelled with its contents however due to weathering, it had washed away. The licensee corrective actions included ensuring labels used are weatherproof. There were no overexposures as a result of this event.
5812	2023-02-07	0	Breach of security	Medical	Diagnostic and therapeutic nuclear medicine	A hot lab door was found unsecured with no authorized user present. All nuclear substances were accounted for. Since the room is accessed using an electronic card, the door should not have been unlocked. The licensee changed the lock

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						on the door to limit those that could physically unlock the door.
5817	2023-02-07	0	Device malfunction	Industrial	Fixed gauge	A fixed gauge was found to have a shutter stuck in partially open position. Vessel entries occurred during the malfunction, but maximum estimated doses did not exceed regulatory limits. The gauge was replaced by a third-party service provider and the licensee revised their lock out procedure. An administrative monetary penalty (AMP) was issued to the licensee.
5824	2023-02-20	0	Transport issue-MVC	Commercial	Processing of nuclear substances	A vehicle transporting 11 Type A packages containing Tc-99m and Ga-67 was involved in a low-speed collision in a parking lot. There was no damage to the packages. The licensee reminded employees of the importance of paying attention, even when driving at low speeds.
5827	2023-02-21	0	Device damaged	Industrial	Portable gauge	A portable gauge sustained superficial damage when it fell from a vehicle tailgate. There was no damage to the sources or shielding. The gauge was repaired by a third-party service provider. The licensee reminded

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						employees to ensure gauges are placed fully on stable surfaces.
5837	2023-02-24	0	Device damaged	Industrial	Portable gauge	A portable gauge sustained superficial damage when it fell from a vehicle tailgate. There was no damage to the sources or shielding. The gauge was repaired by a third-party service provider. The licensee reminded employees that gauges must be secured in a Type A package prior to moving the vehicle.
5830	2023-02-27	0	Device malfunction	Industrial	Portable gauge	A portable gauge with a shutter stuck in partially open position was received by a third-party service provider. The service provider closed the shutter and serviced the gauge. The licensee modified their procedure to include improved maintenance steps and checks to verify shutter position prior to shipping for service.
5832	2023-02-27	0	Spill	Academic and research	Lab studies and consolidated use	There was a spill during the synthesis of F-18, resulting in contamination of 3 workers on clothing, personal protective equipment, and hair. The licensee determined there was an aerosolized contamination of F-18 in the lab and modified procedures to prevent

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						recurrence. There were no overexposures as a result of this event.
5833	2023-02-27	0	Device damaged	Industrial	Industrial radiography	An exposure device source could not be returned into the camera. Workers trained in source retrieval were able to safely retrieve the source, and the device was sent to a third-party service provider for maintenance. There were no overexposures as a result of this event.
5835	2023-02-28	0	Device malfunction	Industrial	Fixed gauge	A fixed gauge was found to have a shutter stuck in open position. A third-party service provider went on site and repaired the gauge. The licensee installed additional device protections to prevent recurrence.
5836	2023-02-28	0	Breach of security	Academic and research	Other	A Class II facility control room door, which has additional security features, was not armed at the end of the day and was left unarmed overnight. The irradiator and control room were locked. There was no breach of security and the outer premises of the building remaining secure and armed. The licensee reminded employees to double check arming the vestibule prior to leaving work for the day.

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5839	2023-03-01	0	Device damaged	Industrial	Portable gauge	A portable gauge sustained superficial damage when it was struck by an excavator bucket on a construction site. There was no damage to the sources or shielding. The gauge was repaired by a third-party service provider. The licensee reminded employees of all gauge-related security measures.
5845	2023-03-07	0	Spill	Medical	Diagnostic and therapeutic nuclear medicine	A spill around 100 EQ of Tc-99m occurred during patient injection, caused by a defective injection needle hub. Contamination was limited to the arm of the injection chair, which was cleaned and securely stored for decay. There was no worker or patient contamination. The licensee reminded employees to carefully inspect equipment prior to use and submitted a product complaint to the manufacturer.
5854	2023-03-07	0	Device malfunction	Industrial	Fixed gauge	Two fixed gauges were found to have issues caused by exposure to corrosive material. The first had a shutter stuck in the closed position. The licensee removed and securely stored the gauge until disposal. This gauge was determined to be unnecessary and was not replaced. The second gauge had a corroded handle. The licensee had the

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						handle replaced and installed additional device protections to prevent recurrence.
5855	2023-03-07	0	Transport issue-MVC	Industrial	Portable gauge	A parked vehicle containing a portable gauge was struck by heavy equipment on a construction site. There was no damage to the gauge. The licensee is considering adding a flashing beacon to their vehicles for use on constructions sites.
5843	2023-03-08	0	Breach of security	Medical	Radiation therapy	A high dose rate (HDR) treatment room was found unsecured when there was no authorized user present. All nuclear substances were accounted for. The licensee modified procedures to include a second door check step.
5848	2023-03-08	0	Device malfunction	Industrial	Fixed gauge	A fixed gauge was found to have a shutter stuck in closed position. The licensee removed and securely stored the gauge until disposal.
5850	2023-03-08	0	Device malfunction	Medical	Radiation therapy	A 'Beam-On' warning light was not functioning properly due to an electrical relay issue. The licensee swapped the failed electrical relay for the 'Beam-Off' relay, as the 'Beam-Off" warning light is not a regulatory requirement, and distributed staff communications to

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						allow safe use of the impacted accelerator until parts were received and the issue was repaired.
WNSL-4	2023-03-09	0	Breach of security	Commercial	Waste nuclear substance	The circumstances and corrective actions concerning this event involve protected information.
WNSL-5	2023-03-17	0	Release	Commercial	Waste nuclear substance	Holding tank contents were inadvertently discharged to the municipal sewer system. A supervisor mistakenly referenced an older, incorrect sample analysis report for discharge approval. Contents were below all radiological discharge limits. All non-radiological parameters for discharge were met with the exception of Biological Oxygen on Demand at a concentration of 326 ppm versus the limit of 300 ppm. It was determined that there were likely to be no adverse effects on the environment or health and safety of persons resulting from the release. The licensee took corrective action to introduce additional steps in enhancing the discharge procedure.
5852	2023-03-20	0	Device malfunction	Academic and research	Lab studies and	A capsule containing Zr-89 became stuck in an underground transfer line connecting 2 facilities, during a routine

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
					consolidated use	transfer of material. The capsule became stuck below the receiving station. I was determined that this was caused by using an inactive spare transfer line to send the product. The licensee was able to retrieve the capsule. The licensee improved signage and equipment to prevent recurrence. There was no contamination or overexposure as a result of this event.
5853	2023-03-20	0	Lost	Medical	Diagnostic and therapeutic nuclear medicine	Two category 5 (very low risk) sealed sources (7.4 MBq of I-125 each) were lost following patient injection. The licensee searched the premises but could not recover the sealed sources. The licensee suspects that they were disposed of alongside other biomedical waste. The licensee reviewed relevant policies and procedures with employees.
WNSL-6	2023-03-22	0	Breach of Security	Commercial	Waste nuclear substance	The circumstances and corrective actions concerning this event involve protected information.
5857	2023-03-23	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge was involved in a minor collision when it was rear-ended on the highway. There was no damage to the gauge.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
5859	2023-03-27	0	Spill	Commercial	Processing of nuclear substances	A spill less than 100 EQ of Tc-99m occurred when a vial slipped from its holder and broke on impact with the floor. There was no worker contamination. The area was cleaned and isolated for decay. There was no overexposure as a result of this event.
5860	2023-03-31	0	Unplanned exposure (barrier breach)	Industrial	Industrial radiography	A worker crossed the barrier at the time of a radiography exposure. On investigation the licensee found that the exposure to the worker was well below the regulatory limit. The licensee provided additional training and initiated an investigation into improved radiography barrier delineation.
5870	2023-03-31	0	Device malfunction	Commercial	Servicing	During maintenance on a linear accelerator, technicians noticed a radiation field when it should not have been present. The licensee investigated and was unable to reproduce the malfunction. The manufacturer performed a new set of tests trying to duplicate the event. Despite extensive testing, they were not able to duplicate the issue. The manufacturer continues to analyse the data and is performing additional tests. There were no overexposures as a result of this event.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
5864	2023-04-04	0	Spill	Commercial	Isotope production	A spill greater than 100 EQ of F-18 occurred during a pipette transfer between vials. There was no worker contamination. The area was isolated for decay. The licensee incorporated a holder to stabilize vials during this procedure to prevent recurrence.
5866	2023-04-06	0	Device damaged	Industrial	Fixed gauge	A fixed gauge was found to have a broken shutter mechanism that was stuck in the open position. There was no immediate threat of overexposure. The gauge was assessed by a third-party service provider and determined to be irreparable. The licensee confirmed that the gauge has been disposed of.
5867	2023-04-12	0	Device malfunction	Industrial	Fixed gauge	A fixed gauge was found to have a shutter stuck in open position caused by exposure to corrosive material. A third-party service provider disposed of and replaced the gauge. The licensee is considering additional device protections to prevent recurrence.
5868	2023-04-12	0	Breach of security	Medical	Radiation therapy	An HDR treatment room was found unsecured when there was no authorized user present. All nuclear substances were accounted for. The licensee upgraded security features to

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						include a light that indicated armed/unarmed status.
5869	2023-04-13	0	Breach of security	Medical	Radiation therapy	An HDR treatment room was found unsecured when there was no authorized user present. All nuclear substances were accounted for. The licensee will implement actions to prevent recurrence.
5871	2023-04-13	0	Device damaged	Industrial	Fixed gauge	A fixed gauge with an open shutter fell approximately 7 feet during unrelated repair/maintenance activities on surrounding structures. The gauge shutter was safely closed and there was no damage to the source or shielding. The gauge was re-installed following safety assessment and the licensee installed additional framing support to prevent recurrence.
5872	2023-04-16	0	Device malfunction	Industrial	Fixed gauge	A fixed gauge was found to have a shutter stuck in open position. There was no risk of overexposure, so the gauge was left in place until a third-party service provider disposed of and replaced the gauge.
5878	2023-04-25	0	Transport issue	Commercial	Processing of nuclear substances	A damaged Type A package containing a Mo-99/Tc-99m generator was received by the licensee. The generator was not

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						damaged, and no leak was detected. The licensee notified the consignor and carrier as required.
5879	2023-04-26	0	Breach of security	Medical	Other	A malfunction with a room's security alarm was found during an internal performance audit. The licensee implemented additional security measures until the issue was fixed.
5881	2023-04-28	0	Transport issue-MVC	Commercial	Processing of nuclear substances	A vehicle transporting 9 Type A packages containing Tc-99m was involved in a minor accident. The vehicle was struck by a shopping cart while stopped at a traffic light. There was no damage to the packages.
5883	2023-05-01	0	Device malfunction	Industrial	Fixed gauge	A fixed gauge was found to have a shutter stuck in closed position. The licensee removed and securely stored the gauge until disposal. The licensee ensured nuclear gauge shutters are included in preventative maintenance procedures.
5884	2023-05-03	0	Spill	Commercial	Isotope production	A spill of Zr-89 occurred when a vial in a lead pot broke when the lead pot fell off the cart when a wheel got caught in a rail on the floor. There was no worker contamination. The licensee reminded employees to not cross the rail with the

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						cart. There was no overexposure as a result of this event.
5886	2023-05-04	0	Transport issue	Medical	Diagnostic and therapeutic nuclear medicine	"A damaged Type A package containing a flood source (Co-57) was received. There was no damage to the source and no leak was detected. The licensee notified the consignor and carrier.
WNSL-7	2023-05-09	0	Breach of security	Commercial	Waste nuclear substance	The circumstances and corrective actions concerning this event involve protected information.
5896	2023-05-10	0	Spill	Medical	Diagnostic and therapeutic nuclear medicine	A spill greater than 100 EQ of Lu-177 occurred due to an error with IV handling. There was contamination to worker clothing, but no skin contamination. The equipment and area were cleaned and isolated for decay. The licensee provided additional training to employees and is considering a change in IV equipment. There was no overexposure as a result of this event.
5897	2023-05-11	0	Lost	Medical	Diagnostic and therapeutic nuclear medicine	During an inventory check it was noted that a category 5 (very low risk) sealed source (3 MBq of I-125) was lost. The licensee searched the premises but could not recover the sealed source. The licensee modified procedures to improve control of sealed source inventory.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
5900	2023-05-15	0	Transport issue-MVC	Commercial	Isotope production	A vehicle transporting 2 Type A packages containing F-18 struck a deer. There was no damage to the packages. The licensee plans to investigate wildlife deterrents for vehicles.
5904	2023-05-22	0	Abandonment	Industrial	Oil well logging	A fishing operation for tool string and source was unsuccessful. The licensee requested permission to abandon the tool and submitted the documentation to proceed with abandonment, which was assessed and approved by the CNSC.
WNSL-8	2023-05-26	0	Device malfunction	Commercial	Waste nuclear substance	A fire alarm was triggered by fumes produced due to work being performed in an adjacent room. While alarms can be disabled during certain work activities, the alarm in that room was not disabled prior to the work being started. This fire alarm revealed that the fire control system was disconnected from the electrical system which meant that for a period of time the automated signal was not sent to the fire department. Manual action was required. Several corrective actions were taken, including increased testing of the fire alarm system, as well as other programmatic changes to ensure that the automatic fire alarm system remains operational.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
5911	2023-05-29	0	Device damaged	Industrial	Portable gauge	A portable gauge sustained significant damage when it was run over by heavy equipment on a construction site. The gauge was transported to a third-party service provider for disposal. The licensee reminded the worker to keep the gauge under surveillance.
5912	2023-05-30	0	Breach of security	Industrial	Portable gauge	An unauthorized entry occurred in an area where 1 portable gauge was stored. The gauge was not removed or tampered with, but other equipment was stolen. The licensee notified local police and the gauge and room were resecured.
5913	2023-05-30	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge was involved in a low-speed collision on a construction site. The vehicle was left in neutral instead of park and rolled into a parked vehicle. There was no damage to the gauge. The licensee modified their policy to include use of the emergency brake when parking on a slope and reviewed their internal safe driving policies with the employee.
5915	2023-05-30	0	Breach of security	Industrial	Oil well logging	The licensee notified CNSC of a security-related event. The Nuclear Security Division has reviewed the contents of

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						the final report and is satisfied with the measures taken by the licensee.
5916	2023-05-30	0	Device damaged	Industrial	Portable gauge	A portable gauge sustained significant damage when it was run over by a vehicle that crossed the barrier on a construction site. The gauge shutter was closed and the shielding remained intact. The gauge was transported to a third-party service provider for disposal.
WNSL-9	2023-05-30	0	Release	Commercial	Waste nuclear substance	A worker was rinsing an airless paint sprayer with water outside when it was discovered that that the paint sprayer contained fire protection sealant which was discharged directly to a basin and into the environment. Approximately 2L of a liquid containing 15% fire sealant was released into the environment. The event was the result of a worker not following procedures which would involve the worker draining the substance into a bucket to be sent for hazardous waste disposal. Additional training was provided to prevent a recurrence.
5917	2023-05-31	0	Transport issue-MVC	Commercial	Processing of nuclear substances	A vehicle transporting 2 Type A packages containing I-131 and a Mo-99/Tc-99m generator struck a deer. There was no

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						damage to the packages. The licensee is currently investigating wildlife deterrents for vehicles.
5920	2023-05-31	0	Device malfunction	Industrial	Fixed gauge	A fixed gauge was found to have a shutter stuck in open position. There was no risk of overexposure, so the gauge was left in place until a third-party service provider repaired the gauge on site.
5921	2023-06-01	0	Device malfunction	Medical	Radiation therapy	A last person out (LPO) circuit, a safety parameter incorporating door closure, was not functioning properly. The licensee implemented a CNSC-approved contingency plan to continue treatments until all safety systems were working as intended.
5923	2023-06-01	0	Breach of security	Medical	Diagnostic and therapeutic nuclear medicine	A hot lab door was open while contractors were working nearby and there was no authorized user present. All nuclear substances were accounted for and were relocated to a secure area. Investigation suggested a construction project manager may have gained possession of the door code. The licensee recoded the hot lab door.
5926	2023-06-05	0	Spill	Medical	Diagnostic and	A spill greater than 100 EQ of Tc-99m occurred when the bottom of a lead

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
					therapeutic nuclear medicine	container came loose causing the vial inside to fall. The vial broke on impact with the floor. There was contamination to worker clothing, but no skin contamination. The area was cleaned and isolated for decay. The licensee reminded employees to use carts for transporting vials and inspected the remaining lead containers for defects. There were no overexposures as a result of this event.
5928	2023-06-06	0	Transport issue-MVC	Commercial	Processing of nuclear substances	A vehicle transporting a Type A package containing F-18 struck a deer. There was no damage to the package. The licensee is currently investigating wildlife deterrents for vehicles.
5930	2023-06-06	0	Abandonment	Industrial	Oil well logging	"A fishing operation for tool string and source was unsuccessful. The licensee requested permission to abandon the tool and submitted the documentation to proceed with abandonment, which was assessed and approved by the CNSC.
5933	2023-06-07	0	Transport issue-MVC	Industrial	Portable gauge	A parked vehicle containing a portable gauge was struck by another vehicle at low speed. There was no damage to the gauge.

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5941	2023-06-12	0	Spill	Medical	Diagnostic and therapeutic nuclear medicine	A spill greater than 100 EQ of Tc-99m occurred due to improper transfer technique ans subsequent backspray. The worker had skin contamination on one wrist. Doses remained below the regulatory limit. The licensee reminded employees to use vent needles to prevent recurrence.
5940	2023-06-15	0	Spill	Medical	Diagnostic and therapeutic nuclear medicine	A spill greater than 100 EQ of Tc-99m occurred when a vial was dropped and broke on absorbent padding. There was no worker contamination and no contamination on any surfaces or equipment. The absorbent padding was isolated for decay. The licensee inspected remaining vials for defects. There were no overexposures as a result of this event.
5943	2023-06-19	1	Lost	Industrial	Portable gauge	During an inventory check it was noted that one portable gauge was not accounted for. The licensee initiated an internal investigation to determine the last location of use and notified the local police. The gauge was recovered over 5 months later at a waste management facility. The licensee implemented a sign-in/sign-out procedure for all gauge users

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						and is examining the possibility of tracking devices in gauge cases.
5948	2023-06-23	0	Device damaged	Industrial	Portable gauge	A portable gauge sustained superficial damage when it was struck by equipment on a construction site. There was no damage to the sources or shielding. The gauge was repaired by a third-party service provider. The licensee issued a written warning to the worker and provided refresher training. The licensee also reminded employees to never leave a gauge unattended.
5947	2023-06-25	0	Transport issue	Commercial	Distribution	A water-damaged Type A package containing a Mo-99/Tc-99m generator was found by the carrier to be unfit for air transport. After consultation with the consignor, the carrier replaced the outer packaging and continued transport. There was no loss of containment.
5973	2023-06-26	0	Breach of security	Medical	Radiation therapy	A source storage room alarm was found unarmed when there was no authorized user present. All nuclear substances were accounted for. The licensee implemented actions to prevent recurrence.

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WNSL-10	2023-06-26	0	Spill	Commercial	Waste nuclear substance	The licensee received a shipment of 9 low level radioactive waste drums from a client. On the lid of one of the drums, trace amounts of water were discovered. Analysis of the sample confirmed the presence of H-3. Upon further investigation, the cap on the lid was slightly loose and may have cause a bit of liquid to leak onto the lid. The drum was shipped back to the client in an overpack. Low levels of removable H-3 contamination were found on the skid where the drum had sat. There was no impact tot he facility, staff or the environment as a result of this event.
5950	2023-06-27	0	Device damaged	Industrial	Portable gauge	A portable gauge sustained superficial damage when it was struck by equipment on a construction site. There was no damage to the sources or shielding. The gauge was repaired by a third-party service provider. The licensee retrained and audited the worker responsible for the gauge.
WNSL-11	2023-06-27	0	Spill	Commercial	Waste nuclear substance	During transport from one facility to another a drum containing slightly tritiated water had leaked onto the drum lid. The cause of the leak was found to be loose bolts that secure the lid to the

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						drum. The tightness of the bolts was not verified prior to transport. Corrective actions included training workers to ensure that lids are secured as well as ensuring easy acces to the specific drum tightening tool required.
5951	2023-06-29	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge struck a post at low speed on a construction site. There was no damage to the gauge. The licensee reviewed their internal safe driving policies with the employee.
5952	2023-06-29	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge was struck by another vehicle and the Type A package containing the gauge was ejected from the trunk of the vehicle. There was no damage to the gauge.
5953	2023-07-03	0	Device damaged	Industrial	Portable gauge	A portable gauge sustained damage when it was run over by a vehicle on a construction site. The sources and shielding remained intact. The gauge was assessed by a third-party service provider. The gauge was determined to be irreparable and was disposed of. The licensee reminded employees of the risks inherent in their typical work

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						environment and of their safety and security rules.
5954	2023-07-04	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge was struck by another vehicle at an intersection. There was no damage to the gauge. The licensee reminded drivers to proceed with caution, even at green lights.
5960	2023-07-04	0	Device malfunction	Medical	Radiation therapy	A linear accelerator stopped during treatment. The treatment was recorded as complete, but the full dose was not administered. The licensee contacted the servicing company, who investigated and updated the software to resolve the issue.
5962	2023-07-04	0	Device malfunction	Industrial	Fixed gauge	A fixed gauge was found to have a shutter stuck in open position. Due to its age, the gauge was deemed unrepairable. There was no risk of overexposure, so the gauge was left in place until its eventual disposal.
5955	2023-07-05	0	Device damaged	Industrial	Portable gauge	A portable gauge sustained superficial damage when it was run over by a vehicle on a construction site. There was no damage to the sources or shielding. The gauge was repaired by a third-party service provider. The licensee amended

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						test procedures to improve safe use and handling of gauges on construction sites.
5958	2023-07-06	0	Device malfunction	Industrial	Fixed gauge	A fixed gauge was found to have a shutter stuck in slightly open position. There was no risk of overexposure, so the gauge was left in place until a third-party service provider repaired the gauge on site. The licensee installed additional device protections to prevent recurrence.
5964	2023-07-10	0	Device damaged	Industrial	Portable gauge	A portable gauge sustained superficial damage when it was left unattended on a construction site. There was no damage to the sources or shielding. The gauge was repaired by a third-party service provider. The licensee reminded employees that gauges are not to be left unattended unless properly secured in a vehicle.
5965	2023-07-10	0	Device malfunction	Medical	Radiation therapy	During quality analysis of a linear accelerator, an error message appeared and the 'Beam On – Do Not Enter' light came on, even though the beam had not been turned on. The licensee verified with a survey meter that there was no radiation while the light persisted. The program was reset, and the light turned

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						off. This is a known occasional issue. The licensee plans to replace this linear accelerator in spring 2024.
5976	2023-07-10	0	Breach of security	Medical	Radiation therapy	The HDR door was found locked but not armed. Security personnel did not correctly perform security system checks to validate the system was armed. The licensee provided refresher training and improved signage to prevent recurrence.
5966	2023-07-12	0	Lost	Commercial	Processing of nuclear substances	A Type A package containing I-131 (203 MBq) was lost during transport. The carrier initiated a search, but the package was not located. The carrier modified and reviewed relevant procedures with employees to prevent recurrence.
5968	2023-07-13	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge backed into a parked trailer at low speed. There was no damage to the gauge. The licensee reviewed their internal safe driving policies with the employee.
5970	2023-07-14	0	Device damaged	Industrial	Fixed gauge	A small pin on a source rod in a fixed gauge fell out. The source rod was securely stored until the pin could be replaced and welded.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
5971	2023-07-14	0	Transport issue-MVC	Industrial	Portable gauge	A parked vehicle containing a portable gauge was struck by heavy equipment on a construction site. There was no damage to the gauge. The licensee is considering adding beacon lights or buggy whips to their vehicles for improved visibility on construction sites.
5972	2023-07-17	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge on a construction site struck a post at low speed. There was no damage to the gauge. The licensee reviewed their internal safe driving policies with the employee.
5974	2023-07-18	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge was involved in a low-speed collision when it was struck by another vehicle changing lanes. There was no damage to the gauge. The licensee reminded employees to be vigilant while driving.
5978	2023-07-19	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge struck the back of another vehicle at low speed. There was no damage to the gauge. The licensee reminded employees to obey all traffic laws and maintain safe following distances and posted a notice at the portable gauge storage area.

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5984	2023-07-20	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge backed into a parked vehicle at low speed in a parking lot. There was no damage to the gauge.
5982	2023-07-21	0	Transport issue-MVC	Commercial	Processing of nuclear substances	A vehicle transporting 2 Type A packages containing Tc-99m collided with an oncoming vehicle while rounding a bend on a 2-lane highway. There was no damage to the packages. The licensee had the employee take a defensive driving refresher course and reminded employees to be extra careful on smaller highways.
WNSL-12	2023-07-21	0	Transport issue	Commercial	Waste nuclear substance	During transport from one facility to another, a large package broke free from its restraints and slid in the container at a force that caused damage to the container. No contamination was found. The cause of the event was found to be untrained staff securing the transportation package. The licensee will ensure that all staff involved in securing packages have the proper training.
5986	2023-07-24	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge on a construction site struck a fire hydrant at low speed. There was no

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						damage to the gauge. The licensee reviewed their internal safe driving policies with the employee.
5994	2023-07-24	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge was rear-ended by another vehicle at an intersection. There was no damage to the gauge.
5989	2023-07-25	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge struck the back of another vehicle. There was no damage to the gauge. The licensee had the employee perform a driver skills assessment and complete 4 complementary driving courses.
WNSL-13	2023-07-25	0	Breach of security	Commercial	Waste nuclear substance	The circumstances and corrective actions concerning this event involve protected information.
5990	2023-07-27	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge rolled over when it was driven too close to the edge of the road. There was no damage to the gauge. The licensee had the employee perform a driver skills assessment and complete 4 complementary driving courses.
5991	2023-07-27	0	Breach of security	Medical	Radiation therapy	A malfunction with the sealed source room security alarm was found. Other security barriers were in place, tested

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						and found to be working. No signs of entry were found. The issue with the alarm was resolved and the licensee implemented actions to prevent a recurrence.
5992	2023-07-27	0	Lost	Medical	Diagnostic and therapeutic nuclear medicine	Two category 5 (very low risk) sealed sources (2.8 MBq of I-125 each) were lost due to a deviation from licensee procedure. The licensee searched the premises but could not recover the sealed sources. The licensee reminded employees of the required procedure.
WNSL-14	2023-07-27	0	Lost	Commercial	Waste nuclear substance	A batch of samples received from a client for analysis was lost. Based on radioactivity levels, the samples would have been detected by exit monitors. No surface contamination was detected to indicate any spill, and there were no abnormal stack emissions, passive air sample results, or bioassay results. The licensee took corrective actions to update chain of custody procedures.
6032	2023-08-02	0	Spill	Academic and research	Lab studies and consolidated use	A spill of 125 cubic meters of uranium bearing solution from the primary containment tank into to the secondary containment occurred due to a failure of the primary tank. The material was

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						pumped into another storage tank on site. There was no personal contamination, no environmental release, and no overexposures as a result of this event. The licensee initiated a detailed investigation to determine the cause of the failure and potential preventative measures to prevent recurrence.
5999	2023-08-03	0	Spill	Commercial	Processing of nuclear substances	A spill greater than 100 EQ of Tc-99m occurred when a vial was dropped and broke on impact with the floor. The worker had skin contamination on the face and hands. Doses remained below the regulatory limit. The contaminated area was isolated for decay.
6007	2023-08-03	0	Transport issue-MVC	Commercial	Isotope production	A vehicle transporting 3 Type A packages containing F-18 struck the back of another vehicle. There was no damage to the packages. Licensee reminded employees to remain vigilant and maintain safe distances while driving.
6000	2023-08-08	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge was involved in a single-vehicle accident when it struck a guard rail due to driver fatigue. The handle on the Type A package was snapped off, but there was

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						no damage to the gauge. The licensee had the employee re-take safe driving training.
6003	2023-08-10	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge struck a deer. There was no damage to the gauge.
6004	2023-08-11	0	Spill	Medical	Diagnostic and therapeutic nuclear medicine	A spill greater than 100 EQ of F-18 occurred when a vial was dropped and broke on absorbent padding. The worker had skin contamination on both hands. Doses remained below the regulatory limit. The contaminated equipment was isolated for decay. The licensee ordered new equipment to improve vial handling and reminded employees to wear appropriate personal protective equipment.
6005	2023-08-11	0	Breach of security	Medical	Radiation therapy	An HDR treatment room was found unsecured when there was no authorized user present. All nuclear substances were accounted for. The licensee had a meeting with the CNSC about security improvement and the licensee is exploring the addition of a new secondary barrier.
6009	2023-08-14	0	Device damaged	Industrial	Industrial radiography	An exposure device source could not be returned into the camera due to a guide

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						tube that became dented in a fall. Workers trained in source retrieval were able to safely retrieve the source. The damaged equipment was removed from service and replaced. The licensee directed employees to use secondary securement measures where there is a risk of equipment falling. There were no overexposures as a result of this event.
6010	2023-08-14	0	Device damaged	Industrial	Industrial radiography	An exposure device sustained damage when a spool (weighing approx. 1400lb) fell on the device control cables. There was no damage to the source or shielding. The device was securely stored until the source had decayed sufficiently to be safely changed, at which point damaged parts were replaced. The licensee reminded employees to be cautious of equipment placement and, when working with off-ground objects, to verify that they are secure.
6015	2023-08-15	0	Spill	Commercial	Processing of nuclear substances	A spill greater than 100 EQ of F-18 occurred when a fitting was not adequately tightened after equipment maintenance. There was no contamination to workers. The contaminated area was isolated for decay.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
6014	2023-08-16	0	Device malfunction	Industrial	Portable gauge	A portable gauge was found to have a shutter stuck in partially open position while in the field. The gauge was transported back to the storage facility, where maintenance was performed, and the gauge was returned to service. To prevent recurrence, the licensee now provides a shutter cleaning kit with each portable gauge package.
6017	2023-08-18	0	Device damaged	Industrial	Fixed gauge	A small pin on a source rod in a fixed gauge fell out. The source rod remained in the fixed gauge and the pin has been replaced and welded. This event is linked to event 5970.
6018	2023-08-18	0	Device malfunction	Industrial	Portable gauge	A portable gauge was found to have a shutter stuck in open position while in the field. The gauge was transported back to the storage facility, where maintenance was performed, and the gauge was returned to service. The licensee reminded employees to communicate required maintenance and to verify shutters are closed prior to transporting portable gauges.
6019	2023-08-21	0	Spill	Commercial	Processing of nuclear substances	A spill greater than 100 EQ of I-131 occurred when a vial broke while crimping the lid. There was no

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						contamination to workers. The contaminated area was isolated for decay. Workers underwent thyroid monitoring, and no iodine uptake was detected. The licensee reminded employees to handle equipment delicately.
6025	2023-08-23	0	Device malfunction	Industrial	Portable gauge	A portable gauge with a shutter stuck in open position was received by a third-party service provider. The service provider closed the shutter and serviced the gauge. The licensee reminded employees to verify shutter position prior to shipping for service.
6026	2023-08-25	0	Spill	Commercial	Processing of nuclear substances	A spill greater than 100 EQ of I-131 occurred when a worker tripped and dropped a vial, which broke on impact with the floor. There was no contamination to workers. The contaminated area was isolated for decay. Workers underwent thyroid monitoring and no iodine uptake was detected. The licensee reminded employees to conduct thorough risk assessments.
5997	2023-08-28	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge on a construction site was struck by a

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						piece of heavy equipment. There was no damage to the gauge. The licensee plans to provide 2-way radios to employees to communicate with equipment operators on-site and reminded employees of safe work practices.
6033	2023-08-28	0	Spill	Commercial	Processing of nuclear substances	A spill greater than 100 EQ of I-131 occurred when a vial was dropped and broke in a low-space area. There was no contamination to workers. The contaminated area was isolated for decay. Workers underwent thyroid monitoring, and no iodine uptake was detected.
6028	2023-08-29	0	Transport issue-MVC	Commercial	Processing of nuclear substances	A vehicle transporting 11 excepted packages containing trace amounts of Tc-99m struck the back of another vehicle in stop-and-go traffic. There was no damage to the packages.
6029	2023-08-29	0	Device damaged	Industrial	Portable gauge	A portable gauge sustained damage when it was run over by heavy equipment on a construction site. The sources and shielding remained intact. The gauge was sent to a third-party service provider for assessment. The licensee discussed the incident and prevention measures with employees.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
6031	2023-08-30	0	Device damaged	Industrial	Fixed gauge	A failure on a production line caused damage to a fixed gauge mounting bracket. A third-party service provider was contacted to remove and securely store the gauge. The manufacturer re-installed the gauge with replacement parts. The licensee is considering adding PLC programming to prevent recurrence.
6034	2023-08-31	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge was struck by a drunk driver at an intersection. There was no damage to the gauge.
6036	2023-09-04	0	Spill	Academic and research	Lab studies and consolidated use	A spill of 1,000L uranium bearing solution from primary containment to secondary containment occurred during cleaning of the primary tank. The material was pumped into a storage tote placed within secondary containment. There was no personal contamination, no environmental release and no overexposures as a result of this event.
6038	2023-09-06	0	Lost	Academic and research	Lab studies and consolidated use	A Liquid Scintillation Counter (LSC) containing a category 5 (very low risk) sealed source (510 kBq of Cs-137) was disposed of and sent to landfill without notification to the Radiation Protection

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						office. The licensee improved device labelling to prevent recurrence.
6048	2023-09-07	0	Transport issue-MVC	Commercial	Processing of nuclear substances	A vehicle transporting 2 Type A packages containing Tc-99m was rear-ended at a red light. There was no damage to the packages.
6045	2023-09-11	0	Breach of security	Industrial	Industrial radiography	A break-in occurred at a radiography storage location and a laptop was stolen. The area where the radiography devices were stored was not targeted and all devices were accounted for. The local police were notified, and the suspects apprehended.
6055	2023-09-18	0	Spill	Academic and research	Lab studies and consolidated use	Two overflow spills of 15L and 30L uranium bearing solution from primary containment to secondary containment occurred due to process flowrates. All material was recovered, and flowrate was reduced and placed under close supervision during optimization. There was no personal contamination, no environmental release and no overexposures as a result of this event.
6057	2023-09-19	0	Spill	Medical	Diagnostic and therapeutic	A spill greater than 100 EQ of Tc-99m occurred when a vial was dropped and broke on impact with the floor. There was no contamination to workers. The

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
					nuclear medicine	contaminated area was isolated for decay. The licensee reminded employees of safe work practices. There were no overexposures as a result of this event.
6059	2023-09-20	0	Lost	Medical	Radiation therapy	Seven category 5 (very low risk) sealed sources (5.8 MBq of I-125 each) were lost. The licensee searched the premises and recovered 6 of the 7 sealed sources. The licensee updated the relevant procedure to prevent recurrence.
6058	2023-09-21	0	Device damaged	Industrial	Industrial radiography	An exposure device sustained superficial damage in a fall from an unapproved rope system. There was no damage to the source or shielding. The device was inspected and repaired before being returned to service. The licensee provided refresher training for the employees involved.
6060	2023-09-24	1	Stolen	Industrial	Portable gauge	A trailer storing a portable gauge containing 2 category 4 (low risk) sealed sources was stolen. The licensee notified the local police. The trailer was equipped with a GPS tracking device; both the trailer and gauge were recovered within 24 hours. The licensee added tracking units to individual gauge cases.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
6064	2023-09-26	0	Transport issue-MVC	Industrial	Industrial radiography	A vehicle transporting an exposure device struck a deer. There was no damage to the device. Licensee reminded employees to be alert to wildlife while driving.
6065	2023-09-26	0	Device malfunction	Industrial	Portable gauge	A portable gauge was found to have a shutter stuck in open position while in the field. The gauge was transported back to the storage facility, where maintenance was performed, and the gauge was returned to service. The licensee modified their procedures, communicated procedures to employees, and provided field maintenance equipment to prevent recurrence.
6069	2023-09-29	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge struck the back of another vehicle. There was no damage to the gauge. Licensee reminded employees to maintain safe distances while driving.
6070	2023-09-29	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge was struck by a piece of debris that came off another vehicle. There was no damage to the gauge.
6071	2023-10-02	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge struck a garage ceiling with the beacon

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						light on the vehicle. There was no damage to the gauge.
6072	2023-10-02	0	Transport issue-MVC	Commercial	Processing of nuclear substances	A vehicle transporting a Type A package containing F-18 struck the back of another vehicle. There was no damage to the package. Licensee provided refresher training and reminded employees of safe driving practices.
6073	2023-10-04	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge was struck by another vehicle changing lanes. There was no damage to the gauge.
6077	2023-10-10	0	Unplanned exposure (barrier breach)	Industrial	Industrial radiography	A worker crossed the barrier at the time of a radiography exposure. On investigation the licensee found that the exposure to the worker was well below the regulatory limit. The licensee modified their procedure to incorporate locks on unmonitored gates during exposures.
6078	2023-10-11	0	Device damaged	Industrial	Portable gauge	A portable gauge sustained damage when it was struck by heavy equipment on a construction site. The sources and shielding remained intact. The employee received a written warning and was required to undergo refresher training, followed by 2 field audits. The licensee

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						also discussed the incident and prevention measures with employees.
6081	2023-10-18	0	Device damaged	Industrial	Industrial radiography	An exposure device source could not be returned into the camera due to a cable connection issue. Workers trained in source retrieval were able to safely retrieve the source. The device was sent to a third-party service provider for maintenance and damaged equipment was disposed of and replaced. The licensee reminded employees to verify cable tip conditions, including under the crimps.
6082	2023-10-19	0	Device malfunction	Academic and research	Lab studies and consolidated use	The sealed source of a gamma source checker could not be fully retracted to the shielded position. The source checker was removed from service and securely stored until disposal. The licensee checked the condition of other units and is creating a life-cycle management plan for source checkers.
6083	2023-10-20	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge struck the back of another vehicle at an intersection. There was no damage to the gauge. Licensee reminded employees to pay attention and maintain safe distances while driving.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
6084	2023-10-24	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge slid on black ice into the highway median while changing lanes. There was no damage to the gauge. Licensee reminded employees of safe winter driving practices.
6095	2023-10-24	0	Breach of security	Medical	Radiation therapy	A bunker door was kept open during a source exchange. During that period, security personnel left the room unsecured when there was no authorized user present. All nuclear substances were accounted for. The licensee implemented actions to prevent recurrence.
6086	2023-10-25	0	Transport issue-MVC	Industrial	Industrial radiography	A vehicle transporting an exposure device was involved in a single-vehicle accident when it slid in icy conditions and rolled. There was no damage to the device. Licensee reminded employees of safe winter driving practices.
6091	2023-10-31	0	Spill	Commercial	Processing of nuclear substances	A spill greater than 100 EQ of F-18 occurred when a vial fell from its holder and broke on absorbent padding. The worker had skin contamination on the arm. Doses remained below the regulatory limit. The contaminated equipment was isolated for decay. The

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						licensee added improved labelling, signage, and padding for equipment.
6092	2023-11-01	0	Device malfunction	Industrial	Fixed gauge	"A fixed gauge was found to have a loose shutter, likely caused by exposure to vibrations and weather. The gauge is still operational and there is no risk of overexposure, so it has been left in place. The licensee has planned to have the gauge disposed of and replaced by a third-party service provider during their next operation shutdown in 2024.
6097	2023-11-03	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge struck the back of another vehicle at an intersection. There was no damage to the gauge.
6101	2023-11-07	0	Device malfunction	Industrial	Fixed gauge	A fixed gauge was found to have a shutter stuck in closed position. A third-party service provider repaired the gauge on site.
6108	2023-11-10	0	Device damaged	Industrial	Industrial radiography	An exposure device source became disconnected and could not be returned into the camera. Workers trained in source retrieval were able to safely retrieve the source, and the device was sent to a third-party service provider for maintenance and damaged equipment was disposed of and replaced.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
6111	2023-11-15	0	Lost	Medical	Diagnostic and therapeutic nuclear medicine	A category 5 (very low risk) sealed source (10.6 MBq of I-125) was lost, believed to have been disposed of alongside biomedical waste. The licensee searched the premises but could not recover the sealed source. The licensee reviewed the relevant procedure with employees.
6112	2023-11-15	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge struck a moose. There was no damage to the gauge.
6116	2023-11-20	0	Device damaged	Industrial	Fixed gauge	A fixed gauge was found to have a broken lockout ring on a source holder. Due to the physical location of the device, there was no immediate threat of exposure. The ring was repaired with a tack weld. The licensee determined that the damage was likely due to vibration and will closely monitor the condition of the gauge moving forward.
WNSL-15	2023-11-20	0	Device malfunction	Commercial	Waste nuclear substance	A sampler attached to the air filter system failed during a period in which there was no radiological based activity taking place. Due to this there was no release to the environment. The failure was due to normal mechanical degradation of the sampling fan. The corrective action was to replace the

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
						damaged fan as well as proactively replace the components in other sampling fans that are prone to degradation.
6117	2023-11-21	0	Transport issue-MVC	Commercial	Isotope production	A vehicle transporting 3 excepted packages containing trace amounts of F-18 made a last-minute lane change and struck another vehicle making a turn. There was no damage to the packages. The licensee reminded employees to be careful of making abrupt changes while driving.
6120	2023-11-23	0	Spill	Medical	Diagnostic and therapeutic nuclear medicine	A spill greater than 100 EQ of F-18 occurred due to a pin hole in the Patient Administration Set. There was no contamination to workers or patients. The contaminated area was isolated for decay. The licensee reminded employees to perform test flushes prior to injection.
6122	2023-11-27	0	Breach of security	Medical	Radiation therapy	An HDR treatment room was found unsecured when there was no authorized user present. All nuclear substances were accounted for. The licensee revised their security plan and increased security measures. The security plan was submitted to the Nuclear Security Division for review.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
6124	2023-11-28	0	Spill	Commercial	Processing of nuclear substances	A spill greater than 100 EQ of Tc-99m occurred when a vial was dropped and broke on impact with the floor. There was no contamination to workers. The contaminated area was cleaned, covered in lead sheets, and monitored to allow for continuation of work. The licensee switched to better-suited equipment to prevent recurrence. There were no overexposures as a result of this event.
6123	2023-11-29	0	Device damaged	Industrial	Portable gauge	A portable gauge sustained damage when it was struck by heavy equipment on a construction site. The sources and shielding remained intact. The employee received a written warning and was suspended from portable gauge use indefinitely. The licensee also discussed the incident and prevention measures with employees.
WNSL-16	2023-12-05	0	Device malfunction	Commercial	Waste nuclear substance	An erroneous fire alarm was sounded at a licensee facility. The false fire alarm was due to fluctuating municipal water supply pressure which triggers the outdated pressure switches (in turn triggering the fire alarm). The corrective action was to replace the outdated pressure switches.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
6130	2023-12-06	0	Transport issue-MVC	Commercial	Processing of nuclear substances	A vehicle transporting a Type A package containing Tc-99m was rear-ended by another vehicle while waiting to make a turn. There was no damage to the package.
6131	2023-12-08	0	Unplanned exposure (barrier breach)	Industrial	Industrial radiography	A worker crossed the barrier at the time of a radiography exposure. On investigation the licensee found that the exposure to the worker was well below the regulatory limit. The licensee provided refresher training and reminded employees of proper procedures for clearing areas and setting up barriers and signage.
6132	2023-12-08	0	Transport issue-MVC	Industrial	Portable gauge	A vehicle transporting a portable gauge was reversing at low speed and struck a forklift. There was no damage to the gauge. Employee was required to review policies on safe operation of company vehicles.
6135	2023-12-14	0	Transport issue-MVC	Commercial	Processing of nuclear substances	A vehicle transporting 2 Type A packages containing Tc-99m was involved in a low-speed collision when reversing in a parking lot. There was no damage to the packages. The licensee reminded employees to remain vigilant.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
6137	2023-12-18	0	Lost	Medical	Diagnostic and therapeutic nuclear medicine	A category 5 (very low risk) sealed source (5.7 MBq of I-125) was lost. The licensee searched the room but did not recover the sealed source. The licensee provided refresher training to employees.
6140	2023-12-22	1	Stolen	Industrial	Portable gauge	A vehicle storing a portable gauge was stolen. The licensee notified the local police. The gauge was not recovered. The licensee reminded employees to use caution during transportation and storage, and to minimize overnight storage of gauges in vehicles.
6144	2023-12-28	0	Breach of security	Commercial	Processing of nuclear substances	A radiopharmacy door was found to be locked by only 1 of 2 locks and a technician noticed that the contents of the room were disturbed. All nuclear substances were accounted for. The licensee had the door re-keyed, and reviewed security feed to identify a possible suspect.
6145	2023-12-28	0	Other	Industrial	Fixed gauge	"A fire occurred near a fixed gauge during maintenance activities (welding). There was no damage to the gauge. The licensee has updated their hot work procedure and risk assessment checklist to prevent recurrence.

Event ID	Date reported	INES rating	Event type	Sector	Subsector	Event Summary
6146	2023-12-31	0	Transport issue-MVC	Commercial	Processing of nuclear substances	A vehicle transporting a Type A package containing Tc-99m slid in snowy conditions and struck a parked vehicle. There was no damage to the package. Licensee reminded employees of safe winter driving practices.

Appendix K: Outreach and engagement activities

Table 27: Outreach and engagement activities in 2023

Date	Audience / Meeting attendees	Type of activity	Topics
February 2023	CNSC/Industrial radiography representatives	Working group - virtual	• Review of Action Items • CNSC regulatory updates • QSA Global Update • Update on PCP-09, *Exposure Device Operator Personnel Certification Guide* • Planning for May meeting
March 2023	C3 Working Group Meeting	Virtual	• Third Party Servicing and other contractors
March 2023	High School Students	In-Person	• Career outreach regarding careers in Medical and Health Physics
April 2023	CNSC/Canadian Radiation Protection Association (CRPA)	Working group - virtual	• Update on REG DOC 2.5.6, *Design of Rooms Where Unsealed Nuclear Substances Are Used* • Update on REGDOC 1.6.1, *Licence Application Guide: Nuclear Substances and Radiation Devices* • Transport Survey *Nuclear Substances and Radiation Devices Regulations* update • ACR reminders • Irradiation of dosimeters in transit • Licensing update • Mandatory RS training

Date	Audience / Meeting attendees	Type of activity	Topics
May 2023	Industrial Radiography Working Group	Semi-annual meeting with industry stakeholders.	• Reporting on the status of action items from October 2022 meeting and future direction • Update on planning the reinstatement of Scheme committee meetings
May 2023	Industrial radiography outreach meeting	In-person meeting	• CNSC updates • QSA Global presentation • Case Study • IAEA/ISEMIR IR presentation • Certification presentation • Security presentation
May 2023	Canadian Radiation Protection Association	In-Person Conference	• Participation in sessions including information on: o Overview of compliance verification program o Inspection trends o Common non-compliances o Amended *Radiation Protection Regulations* o Updated regulatory documents o CII Service Technician Qualifications o Development of Service Technician Technical Competency • CNSC booth participation
June 2023	Canadian Association of Medical Radiation Technologists	In-Person Conference	• Booth at the CAMRT Conference
June 2023	Nuclear medicine applicant authorities and	Targeted email	• Update on the CNSC's expectations related to the

Date	Audience / Meeting attendees	Type of activity	Topics
	radiation safety officers		ongoing trend of poor compliance with the amended *Radiation Protection Regulations*.
June 2023	World-wide experts representing 28 nations from government, industry and research organizations	International Symposium on the Packaging and Transport of Radioactive Materials	• Regulatory requirements for the safety and security during the transport of radioactive materials in Canada • Canadian Nuclear Safety Commission Transport Package Certification Process
June 2023	Nuclear substance and radiation device licensees	Targeted email	• Information about change in nuclear substance and radiation device CNSC licensing contacts
June to September	Class II Licensee	Remote	• Outreach on Service Technician Competency
July 2023	InterACTIONS (Medical Physics Professionals)	Journal Publication	• A Good Catch Near Misses Program – is it the Solution to Prevent Serious Injuries in Cancer Centres? By Dan Alu
July 2023	All licensees radiation protection professionals	Virtual webinars (one English, one French)	• Demonstrating compliance with the Radiation Protection Regulation with regards to: ○ Requirements for contamination meter calibrations ○ Determination of contamination meter detection efficiencies
September 2023	Indigenous Nations and communities, members of the public and local organizations from the Ignace Ontario area	Northwest Nuclear Exploration Forum	• Sharing of information about the nuclear industry and the deep geological repository project

Date	Audience / Meeting attendees	Type of activity	Topics
October 2023	Scheme Committee meeting: Representatives from the industrial radiography community including licensees and training providers	In-person annual meeting with industry stakeholders.	• Review of the analysis of the exposure device operator certification written exam questions and examination results • Impact of the new revision of PCP-09 *Exposure Device Operator Personnel Certification Guide* on safety • Review of common errors on application forms • Future direction
October 2023	ASTRO Conference	In Person	• "Pay it Forward: Partnering with our patients"
October 2023	InterACTIONS (Medical Physics Professionals)	Journal Publication	• October: 3rd Party Servicer coming to Town? By Jon
October 2023	Regional Science Fair Judge	Virtual	
December 2023	CNSC/CRPA	Working Group	• Approval of previous minutes • Update on *Nuclear Substances and Radiation Devices Regulations* • Webinars for nuclear medicine technologist members • Radiation safety officer responsibilities for therapy patients treated at another facility • Role of the RSO Role of the Radiation Safety Officer: Final Evaluation Report - Canadian Nuclear Safety Commission • Licensee database on CNSC website
Throughout 2023 (total of 21 sessions)	New licensees (including radiation safety officers and	Targeted virtual meeting	• Joint effort between licensing and inspection staff to help educate new licensees on the various

Date	Audience / Meeting attendees	Type of activity	Topics
	applicant authorities)		aspects of licensing and compliance, including: • Review of the issued licence • Relevant information/resources available on the CNSC website • Overview of the inspection process • Overview of the licensing process • Reporting requirements • Question and answer session
Ongoing		Grant Program to Canadian Organization of Medical Physicists	• $100 000 for three years for ACFD related research projects
Monthly in 2023		Targeted emails	Topics covered in the DNSR Digest in 2023: • Message from the Director General • Notification of posting of the 2021 Regulatory Oversight Report on the website • Notice of transport survey • Request for input on what licensees would like to see in the Digest. • Most common non-compliances (including vessel entry attachments) • Transport survey reminder • Event reporting reminder • Open government • GE Healthcare recall of nuclear medicine systems

Date	Audience / Meeting attendees	Type of activity	Topics
			• Dose limit exceeded? Now What? • Reminder about delays in records office processing • Decommissioning tool • Request for suggestions for the Digest • Dosimetry services- webpage updated • Update on review *of Class II Nuclear Facility and Prescribed Equipment Regulations* (C2NFPER) • Multifactor Authentication for SSTS and NMAS Users • NSRD Licensees—Managing your Licensed Locations • Regulatory Oversight Report 2022 out for public comment • Tips for successfully writing standard operating procedures or radiation safety manuals • Clear out your collection of old CNSC documents and forms • Canadian Radiation Protection Association - Did you know? (mentorship) • Know your ABCs – Classes of Nuclear Substances • Reminder that the Regulatory Oversight Report out for comment • Expectations for contamination monitoring equipment calibration • Updates to *Transportation of Dangerous Goods Regulations* (Registration system) • Do's and Don'ts for Gauge Users

Date	Audience / Meeting attendees	Type of activity	Topics
			• Posting of the 2022 Regulatory Oversight Report on the website • *Radiation Protection Regulations* and female nuclear energy workers

Appendix L: Status of issues, concerns and requests from intervenors

Four intervenors provided comments on the Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2022. The tables below summarize their interventions and staff response to the interventions.

Table 28: Summary of areas of interest in the interventions

Area of interest	Number of comments and issues raised
Reportable events	12
Availability of data	8
Report format and contents	5
Trends in reporting	5
International obligations	4
Outreach and engagement	3
Doses to workers	2
Commission proceedings	2
Inspection planning	2
Inventory control	1
CNSC website posting	1
Participant funding	1
Support for conclusions in the ROR	1
Total	47

Table 29: Summary of intervention dispositioning

Intervenors on the 2022 ROR	Total number of comments and issues raised	Number of comments and issues addressed by CNSC staff	Notes
Canadian Environmental Law Association	25	25	Offer extended to meet in person
Nuclear Transparency Project	5	5	Offer extended to meet in person
Canadian Radiation Protection Association	16	16	Offer extended to meet in person
Canadian Nuclear Workers Council	1	1	Offer extended to meet in person

Appendix M: References

M1: Act and regulations

- *Nuclear Safety and Control Act*
- *Administrative Monetary Penalties Regulations*
- *Class II Nuclear Facilities and Prescribed Equipment Regulations*
- *General Nuclear Safety and Control Regulations*
- *Nuclear Substances and Radiation Devices Regulations*
- *Packaging and Transport of Nuclear Substances Regulations, 2015*
- *Nuclear Security Regulations*
- *Radiation Protection Regulations*
- *Nuclear Non-proliferation Import and Export Control Regulations*
- *Canadian Nuclear Safety Commission Cost Recovery Fees Regulations*
- *Transportation of Dangerous Goods Act, 1992* (Transport Canada)
- *Transportation of Dangerous Goods Regulations* (Transport Canada)

M2: Regulatory documents

- REGDOC-1.4.1, *Licence Application Guide: Class II Nuclear Facilities and Prescribed Equipment*
- REGDOC-1.5.1, *Application Guide: Certification of Radiation Devices or Class II Prescribed Equipment*
- REGDOC-1.6.1, *Licence Application Guide: Nuclear Substances and Radiation Devices*
- REGDOC-1.6.2, *Radiation Protection Programs for Nuclear Substances and Radiation Devices Licences*
- REGDOC-2.2.2, *Personnel Training*
- REGDOC-2.2.3, *Personnel Certification: Radiation Safety Officers*
- REGDOC-2.2.3, *Personnel Certification: Exposure Device Operators (and the associated CSA PCP-09: Exposure Device Operator Personnel Certification Guide)*
- REGDOC-2.5.5, *Design of Industrial Radiography Installations*
- REGDOC-2.5.6, *Design of Rooms Where Unsealed Nuclear Substances Are Used*
- REGDOC-2.5.7, *Design, Testing and Performance of Exposure Devices*
- REGDOC-2.7.1, *Radiation Protection*
- REGDOC-2.7.2, *Dosimetry, Volume I: Ascertaining Occupational Dose*
- REGDOC-2.9.1, *Environmental Principles, Assessments and Protection Measures*
- REGDOC-2.11, *Framework for Radioactive Waste Management and Decommissioning in Canada*
- REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste*
- REGDOC-2.11.2, *Decommissioning*

- REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material*
- REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*
- REGDOC-2.13.2, *Import and Export*
- REGDOC-2.14.1, Volume I: *Information Incorporated by Reference in Canada's Packaging and Transport of Nuclear Substances Regulations, 2015*
- REGDOC-3.1.3, *Reporting Requirements for Waste Nuclear Substance Licensees, Class II Nuclear Facilities and Users of Prescribed Equipment, Nuclear Substances and Radiation Devices*
- REGDOC-3.2.1, *Public Information and Disclosure*
- REGDOC-3.2.2, *Indigenous Engagement*
- REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*
- REGDOC-3.5.2, *Compliance and Enforcement: Administrative Monetary Penalties*
- REGDOC-3.5.2, *Compliance and Enforcement, Volume II: Orders Under the Nuclear Safety and Control Act*
- REGDOC-3.5.3, *Regulatory Fundamentals*
- REGDOC-3.6, *Glossary of CNSC Terminology*

M3: International references

While not necessarily explicitly referenced, IAEA safety standards and guidance documents, are translated into regulatory requirements or licence conditions for licensees covered in the report. The following are some of the key IAEA documents that are applicable to licensed activities covered by this report.

- IAEA *Code of Conduct on the Safety and Security of Radioactive Sources*
- IAEA *Guidance on the Import and Export of Radioactive Sources*
- IAEA *Guidance on the Management of Disused Radioactive Sources*
- IAEA SAFETY STANDARDS SERIES No. GSR Part 1-*Government, Legal and Regulatory Framework for Safety*
- IAEA SAFETY STANDARDS SERIES No. GSR PART 3 – *Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards*
- IAEA SAFETY STANDARDS SERIES No. SSR-6 – *Regulations for the Safe Transport of Radioactive Material*
- IAEA TS-G-1.4 – *The Management System for the Safe Transport of Radioactive Material*
- IAEA Safety Standards Series No. TS-G-1.5- *Compliance Assurance for the Safe Transport of Radioactive Material*
- IAEA SAFETY STANDARDS SERIES NO. SSG-26-*Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material*

M4: Other relevant documents

- RD-364: *Joint Canada–United States Guide for Approval of Type B(U) and Fissile Material Transportation Packages*