



Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2016



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From left to right:

Inspection of a mobile linear accelerator unit

Working with nuclear substances

Inspection of a portable gauge

Well logging source storage

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EXECUTIVE SUMMARY

The *Regulatory Oversight Report on the Use of Nuclear Substances in Canada: 2016* summarizes the safety performance of 1,584 licensees that hold a total of 2,233 licences, and which are authorized by the Canadian Nuclear Safety Commission (CNSC) for the use of nuclear substances in the medical, industrial, academic and research, and commercial sectors.

The CNSC regulates the nuclear industry in Canada through a comprehensive program of licensing, certification, compliance verification, enforcement and reporting. For each sector described in this report, CNSC staff evaluate safety performance through inspections, assessments, and reviews of licensee programs and processes.

CNSC staff use a well-established safety and control area (SCA) framework in evaluating each licensee's safety performance. The framework includes 14 SCAs covering all technical areas of regulatory oversight. For the purpose of this report, safety performance is demonstrated by examining licensees' regulatory compliance in select SCAs (i.e., management system, operating performance, radiation protection, and security), as well as effective doses to workers and reported events.

In 2016, as part of the ongoing regulatory oversight of licensees, CNSC staff conducted compliance verification activities consisting of field inspections, desktop reviews and technical assessments of licensee activities. The evaluations of findings for the SCAs covered in this report show that, overall, licensees made adequate provisions for the protection of the health, safety and security of persons and the environment from the use of nuclear substances, and took the measures required to implement Canada's international obligations. Based on this, CNSC staff conclude that the use of nuclear substances in Canada is safe.

Compliance verification

In 2016, CNSC staff conducted 1,452 inspections across the four sectors, including 228 security inspections related to the implementation of [REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources](#), and three inspections related to the export of high-risk sealed sources.

Overall, licensees showed satisfactory compliance ratings in all SCAs examined for this report. CNSC staff ensured that licensees took appropriate corrective actions in cases where non-compliances were discovered. Any non-compliance that had immediate risks to health, safety or security were addressed immediately by licensees. The majority of inspected licensees in 2016 were found to be compliant with requirements in the four SCAs covered in this report:

- In management system, 97.5 percent of licensees ensured that adequate processes and programs were in place to achieve their safety objectives.

- In operating performance, 87.4 percent of licensees made adequate provisions for the health, safety and security of persons, and protection of the environment.
- In radiation protection, 84.6 percent of licensees ensured that exposure of workers and the public to ionizing radiation remained as low as reasonably achievable.
- In security, 93.6 percent of licensees demonstrated that they have adequate provisions in place to prevent the loss, sabotage, illegal use, illegal possession or illegal removal of nuclear substances and prescribed equipment in their care and control.

As part of the phased implementation of REGDOC-2.12.3, security inspections were conducted for licensees in possession of high-risk sources in 2016. Of those inspected, 79 percent were found to be compliant with the regulatory requirements. Licensees have put in place measures to correct all non-compliances noted during these inspections. Details of the security inspections, such as non-compliances, are not provided in this report due to their sensitive nature.

Compliance enforcement

The CNSC uses a graded approach to enforcement to encourage and compel compliance and deter future non-compliances. When non-compliance (or continued non-compliance) has been identified, CNSC staff assess the significance of the non-compliance, and determine the appropriate enforcement action, based on the CNSC's graded approach to enforcement.

In 2016, the CNSC took 22 escalated compliance enforcement actions against licensees in the four sectors, including 14 orders and eight administrative monetary penalties. Most of the enforcement actions were taken against licensees in the industrial sector, consistent with trends from previous years. CNSC staff reviewed corrective measures implemented by all licensees to whom orders were issued and found them to be satisfactory. All eight administrative monetary penalties issued in 2016 have been paid.

Effective doses to workers

Licensees are required to keep radiation doses to persons below CNSC regulatory limits and as low as reasonably achievable in accordance with the radiation protection programs established under the CNSC licences.

In 2016, doses were monitored for 62,013 workers in the four sectors covered in this report. Of those workers, 22,606 were designated as nuclear energy workers (NEWs). The remaining 39,407 were not designated as NEWs, and are referred to as non-NEWs in the report. Exposures to radiation continued to be very low for workers in 2016, consistent with previous reporting years.

As reported to the Commission in [December 2016](#), one NEW received an extremity dose of 1,100 millisieverts (mSv) from contamination while administering medical isotopes. That dose was above the regulatory limit of 500 mSv. Additional details can be found in [section 5.7](#) of this report. None of the

workers designated as NEWs exceeded the one-year effective dose limit of 50 mSv. Also as reported to the Commission in [December 2016](#), one member of the public received a dose of 1.62 mSv as a result of the transport of packages containing nuclear substances with passengers. That dose exceeded the regulatory limit of 1 mSv.

Reported events

For 2016, CNSC staff assessed the 139 events reported by licensees covered in this report. Reported events have been ranked using the [International Nuclear and Radiological Event Scale](#). Of these, 136 were ranked as level 0 (no safety significance), two were ranked as level 1 (anomaly) and one was ranked as level 2 (incident).

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

Conclusion

As a result of the CNSC's comprehensive regulatory oversight of the industry, CNSC staff conclude that the use of nuclear substances in Canada is safe. Adequate provisions for the protection of the health, safety and security of persons and the environment from the use of nuclear substances are in place.

1 BACKGROUND

1.1 Background

The Canadian Nuclear Safety Commission (CNSC) regulates the use of nuclear energy and materials to protect health, safety, security and the environment; to implement Canada's international commitments on the peaceful use of nuclear energy; and to disseminate objective scientific, technical and regulatory information to the public. Persons licensed by the CNSC are responsible for operating their facilities and managing their activities safely and are required to implement programs that make adequate provisions for protecting health, safety, security and the environment. The CNSC is responsible for setting the requirements and verifying compliance against those requirements.

Each year, CNSC staff assess the overall safety performance of the use of nuclear substances in Canada. Staff consider industry performance as a whole, as well as the performance of each sector (i.e., medical, industrial, academic and research, and commercial) separately. This assessment is summarized in this document.

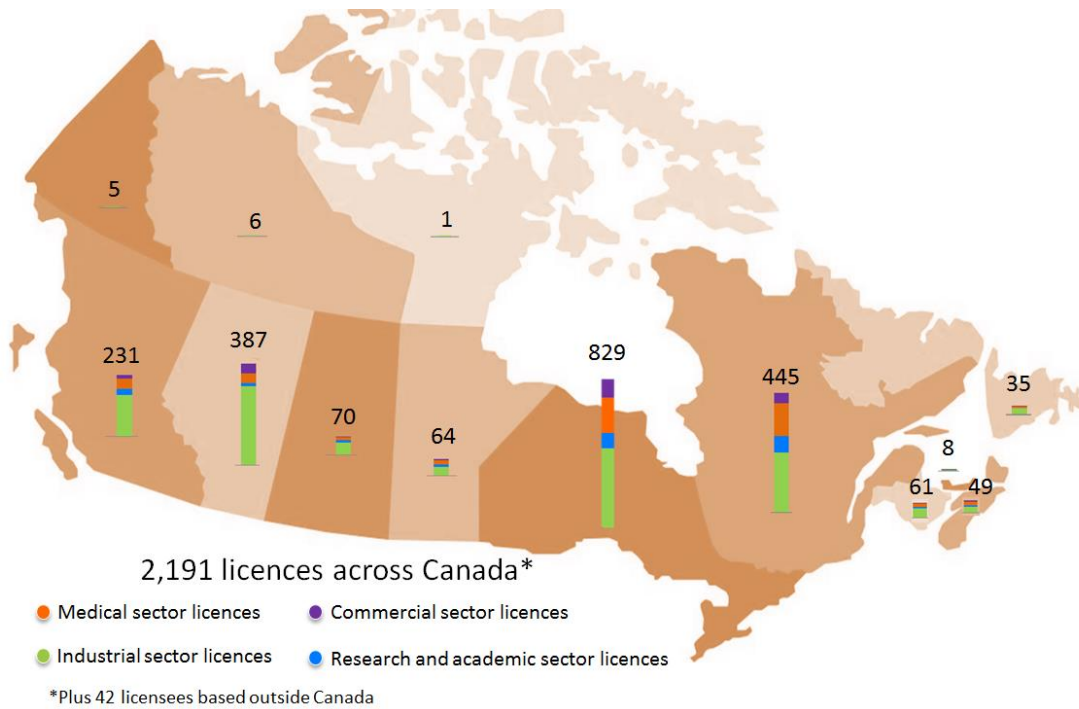
For a comprehensive overview of the CNSC and its activities, consult the CNSC's annual report, [Regulating Nuclear Safety in Canada](#).

Regulatory oversight

The CNSC regulates the nuclear industry in Canada through a comprehensive program of licensing, certification, compliance verification, and enforcement. For each of the nuclear sectors described in this report, CNSC staff evaluate safety performance through assessments, inspections, reviews and evaluations of licensee programs and processes.

These regulatory programs cover various types of activities across all provinces and territories, as shown in figure 1. Licensees include hospitals, universities and research institutions, and a wide variety of industrial manufacturing and production facilities including those that store, produce or service nuclear substances and devices.

The safe use of nuclear substances in Canada is demonstrated through licensees' compliance with the [Nuclear Safety and Control Act](#) (NSCA) as well as its associated regulations, and specific conditions set out in CNSC licences. The NSCA, its regulations and the licences require that licensees implement and maintain appropriate programs to ensure the safety and security of nuclear-related activities, minimize doses to workers and the public, protect the environment, and minimize consequences of events.

Figure 1: Map of Canada including examples of licensee locations

Some licensees that hold CNSC licences to service radiation devices or prescribed equipment are based outside Canada and come to Canada to perform maintenance or servicing work on equipment owned by other licensees. When they work in Canada, these licensees are subject to the same level of regulatory oversight from the CNSC as those whose operations are based in Canada.

Safety and control area framework

To ensure comprehensive regulatory oversight and reporting of licensed activities, CNSC staff have developed a set of safety and control areas (SCAs). SCAs have been in use for a number of years, and represent a well-established set of technical areas that have proven effective in evaluating licensee safety performance of regulated facilities and activities under the CNSC's purview. The CNSC has defined 14 SCAs:

- management system
- human performance management
- operating performance
- safety analysis
- physical design
- fitness for service
- radiation protection
- conventional health and safety
- environmental protection
- emergency management and fire protection
- waste management
- security

- safeguards and non-proliferation
- packaging and transport

2 REPORT OVERVIEW

This regulatory oversight report focuses on the results of compliance verification and enforcement activities in 2016 for licensees that use nuclear substances in four sectors:

- medical
- industrial
- academic and research
- commercial

Each sector's performance is outlined in an individual section in this report.

The report does not cover uranium mines and mills, waste facilities, dosimetry services, Class I nuclear facilities such as nuclear power plants and nuclear research reactors, or Class IB accelerator facilities.

There are three parts to this report:

- regulatory process and developments
- overall safety performance assessment
- sector-specific safety performance assessments

2.1 Safety performance measures

CNSC staff review licensee documents and conduct field inspections to verify that licensees have implemented effective safety programs and practices. Results of these inspections provide information on key aspects of safety performance, within each SCA relevant to the licensed activity.

For the purpose of this report, the following four SCAs are the most relevant indicators of safety performance for licensees in the sectors covered in this report: management system, operating performance, radiation protection, and security. Compliance ratings – also referred to as inspection ratings – reflect overall licensee performance at a program level for each of these SCAs. The nature, type and safety significance of events reported by licensees, and the type of enforcement actions taken by the CNSC in 2016 are provided as supplementary indicators of safety performance. Data from 2012 to 2016 are included in figures for each of these safety indicators to identify five-year trends. Each performance measure is described below.

[Appendix B](#) shows the mapping between the CNSC regulatory naming convention in the inspection reports and those presented in this report for SCAs.

2.1.1 Doses to workers

Each licensee is required to implement a radiation protection program that ensures that the radiation doses to workers are well below regulatory limits and kept [as](#)

[low as reasonably achievable](#) (ALARA), with social and economic factors taken into account. Thus, ascertainment of the magnitude of doses received by workers is an integral part of a licensee's radiation protection program.

This report references two groups of workers that perform the types of work referenced in a CNSC licence: those designated as nuclear energy workers (NEWs) and those that are not designated as NEWs (non-NEWs). The term NEW means a person who is required, in the course of his or her business or occupation in connection with a nuclear substance or nuclear facility, to perform duties in circumstances that may result in receiving a dose of radiation greater than 1 millisievert (mSv) per year. A worker not designated as a NEW means a person is unlikely to receive a dose greater than 1 mSv per year while performing duties in connection with a nuclear substance or nuclear facility. This report provides dose information for all workers, while primarily focusing on those designated as NEWs.

The CNSC's regulatory [effective dose limits](#) for NEWs are set at 50 mSv in any one-year dosimetry period and a total of 100 mSv over a five-year dosimetry period. The one-year dosimetry period covers January 1 to December 31 of every year. The current five-year dosimetry period started on January 1, 2016 and will end on December 31, 2020. For all persons not designated as NEWs, and for all members of the general public, the effective dose limit is 1 mSv per calendar year.

For activities where there is a need for direct handling of nuclear substances, doses to the hands are also monitored. These are known as extremity doses, and they are subject to a regulatory dose limit of 500 mSv in any one-year dosimetry period for NEWs and 50 mSv per calendar year for workers not designated as NEWs. The concept of a five-year dosimetry period does not apply to extremity doses or effective doses incurred by persons who are not NEWs.

[Appendix A](#) provides more information on occupational exposure, ascertaining worker doses and measures to be taken by licensees when a dose limit is exceeded.

2.1.2 Management system

The management system SCA covers the framework that establishes the processes, programs and resources required to ensure that a licensee achieves its safety objectives, continuously monitors its performance against those objectives, and fosters a healthy safety culture.

2.1.3 Operating performance

Operating performance refers to the licensee's ability to perform licensed activities in accordance with pertinent operational and safety requirements defined in the NSCA, its associated regulations and licence conditions. Licensees are expected to demonstrate that they comply with operational and safety requirements by providing workers with appropriate procedures for the safe use of nuclear substances and prescribed equipment, by ensuring that workers follow procedures, and by maintaining records that demonstrate compliance.

2.1.4 Radiation protection

Radiation protection programs are required for every licensee to ensure that contamination levels and radiation doses received by workers are monitored, controlled and maintained below regulatory dose limits, and kept ALARA, with social and economic factors taken into account. Licensees can meet these objectives by monitoring worker doses; posting radiation warning signs; planning appropriately for radiological emergencies; managing oversight of operational activities; instituting effective workplace practices that emphasize the use of time, distance and shielding to minimize exposure to radiation; and using appropriate protective equipment.

2.1.5 Security

The security SCA covers the physical security measures, practices and programs that licensees are required to have in place to prevent the loss, illegal use, illegal possession or illegal removal of nuclear substances during their entire lifecycle, including while they are in storage or during transport. The extent of the security measures required depends upon the types of nuclear substances used and activities performed by each licensee.

The safety and security of sealed sources is increased through effective control and tracking. CNSC compliance inspections include requirements to verify sealed source tracking information.

To ensure proper regulatory oversight of the requirements related to the phased implementation of REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources, CNSC staff conduct security inspections for those in possession of Category 1 and 2¹ sealed sources. Non-compliance details for these inspections are not included in this report due to their sensitive nature.

2.1.6 Enforcement actions

The CNSC may take a variety of enforcement actions to ensure that licensees correct non-compliances in an effective and timely manner. The type of enforcement action taken is commensurate with the risk the non-compliance presents to the environment, the health and safety of workers and the public, and to national security. This report provides detailed information on the following types of enforcement actions taken by the CNSC: orders, administrative monetary penalties (AMPs), decertification of certified exposure device operators and decertification of radiation safety officers at Class II nuclear facilities. [Appendix C](#) provides a list of all orders and AMPs issued by the CNSC in 2016. No exposure device operators or radiation safety officers were decertified in 2016.

¹ Information about the categorization of sealed sources and their relative risks can be found on the [CNSC website](#).

2.1.7 Reported events

Under the NSCA and its associated regulations, licensees are required to immediately report to the CNSC events related to their licensed activities that are of regulatory interest. Within 21 days of becoming aware of the incident, licensees are required to submit a final report to the CNSC on the event. The final report must include an analysis of the cause and circumstances of the event, as well as any measures taken, or proposed to be taken, by the licensee to prevent recurrence. Together, the initial and final reports allow the CNSC to verify whether the licensee has taken appropriate measures to mitigate the event, and implemented adequate corrective actions to prevent recurrence.

The CNSC uses the [International Nuclear and Radiological Event Scale](#) (INES) tool to categorize events in the sectors covered by this report. Additional information on the INES classification can be found on the CNSC [website](#).

2.2 Data collection

Compliance ratings, non-compliance data, and CNSC enforcement actions were obtained from the CNSC's compliance verification and enforcement program in 2016.

Annual compliance reports submitted by licensees in calendar year 2016 provided the data on doses incurred by all persons engaged in licensed activities in the four sectors covered in this report.

2.3 Changes in 2016

At the Commission's direction, CNSC staff introduced the following additions to this report from those of previous years:

- The frequency of repeated unacceptable SCA ratings for licensees is included in the report.
- A list of all inspections conducted in 2016 is included in [appendix E](#).
- Additionally, information on the number of international events involving nuclear substances and radiation devices reported to the International Atomic Energy Agency has been included in the report.

3 REGULATORY PROGRAM FOR THE USE OF NUCLEAR SUBSTANCES

The possession, use, transfer, import, export, abandonment and storage of nuclear substances must be licensed by the CNSC when the amount of nuclear substance involved is greater than its exemption quantity (see Schedule 1 of the [Nuclear Substances and Radiation Devices Regulations](#)). Facilities where certain types of [Class II prescribed equipment are to be installed](#) must also be licensed by the CNSC prior to their construction, operation or decommissioning. A licence is also required to service radiation devices or Class II prescribed equipment.

All licensees that operate Class II nuclear facilities or that service Class II prescribed equipment must have a certified radiation safety officer and a qualified temporary replacement. The radiation safety officer has the responsibility to implement the radiation protection program, ensuring that licensed activities are conducted safely and that all regulatory requirements are met.

All radiation devices and most Class II prescribed equipment, as well as certain types of transport packages, must be certified by the CNSC before they can be used in Canada.

An integral part of the CNSC's regulatory oversight is the compliance and verification program, which measures licensee compliance with CNSC regulatory requirements. Regular inspections and desktop evaluations verify that licensees comply with the [Nuclear Safety and Control Act \(NSCA\)](#) and its associated regulations, as well as any conditions included in their licences.

To determine appropriate levels of regulatory monitoring and control, CNSC staff establish compliance verification plans for each nuclear sector that are based on risk-informed regulatory oversight of each sector's activities. Modifications to the compliance plans are made on an ongoing basis in response to events and changes in licensees' performance.

For the activities covered in this report, the CNSC's risk-informed regulatory program is applied in the following way:

- Each licensed activity is assigned a weighting factor – a coefficient that represents the activity's relative significance with respect to risk.
 - Factors considered in weighting include the form of the nuclear substances (e.g., sealed source, unsealed source or radiation device), the location where the material is being used (e.g., a work site or a controlled facility), and the compliance history of licensees conducting licensed activities.
- Generally, licensees are inspected on a one to five year cycle, based on their risk ranking.

The risk-informed regulatory program provides:

- a risk ranking that recognizes the potential safety impact of the licensed activity
- effective and informed allocation of regulatory oversight effort according to the risk ranking by licensed activity and by licensee performance history

- effective, transparent, consistent and comprehensive regulatory oversight

3.1 CNSC regulatory effort

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. A total of 1,452 inspections were completed in 2016. As shown in table 1, the CNSC staff direct effort for regulating the use of nuclear substances in 2016 amounted to close to 12,645 person days or the annual equivalent of approximately 56 full-time staff. This is down slightly from the staff effort in 2015 which amounted to 59 full-time staff.

Table 1: CNSC staff direct effort for regulating the use of nuclear substances in 2016, all sectors combined

Activity	Person days
Licensing	4,451
Certification	1,790
Compliance verification	6,404

3.2 Licensing

To obtain a licence, an applicant must submit an application to the CNSC. The CNSC will issue a licence only when the applicant:

- is deemed qualified to carry on the activity that the licence will authorize
- has demonstrated that it will protect the health and safety of persons and the environment
- has demonstrated that it will maintain national security
- has confirmed that it will adhere to international obligations to which Canada has agreed

CNSC staff perform a risk-informed technical assessment of applications submitted to the CNSC.

The CNSC has produced a series of licence application guides to ensure that its expectations for applicants are clear, and to facilitate applicants' interactions with the regulator. These guides are reviewed on a five-year cycle as part of the regulatory framework review to ensure they continue to reflect modern regulatory expectations and provide useful guidance to the regulated community. This practice, in turn, facilitates CNSC licensing reviews and minimizes regulatory burden. Application forms and guides can be found on the CNSC website for [nuclear substances and radiation devices](#) as well as for [Class II facilities and prescribed equipment](#).

When applying for licence renewals, existing licensees are subject to the same scrutiny as new applicants. The CNSC decision to renew a licence is based on the application information submitted as well as a satisfactory compliance history.

This includes a review of compliance information such as inspection results, reported incidents and events, and annual compliance reports.

If the application satisfies the above requirements, the Commission, or a designated officer authorized by the Commission, may issue a licence authorizing the licensee to conduct the activities requested in the application. 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.

3.2.1 Licence consolidation strategy

The Directorate of Nuclear Substance Regulation (DNSR), in line with the CNSC's policy to consolidate licences, has developed a strategy aimed at reducing administrative burden on organizations that hold multiple licences for various licenced activities such as hospitals and universities. This strategy included creating and issuing new consolidated licences for Class II nuclear facilities as well as reviewing the licence format and process for those that use nuclear substances and radiation devices.

Consolidation of Class II nuclear facility licences has allowed the CNSC to, for example, authorize a hospital with a medical linear accelerator to operate and service the accelerator under one licence instead of two. In other cases, it has allowed cancer centres to include several types of radiotherapy activities to be covered under a single licence instead of as many as five. In some cases, such as a single organization operating both cyclotron and radiation therapy facilities, licence consolidation is not desired since each licensee's radiation protection program and management structure is different.

The majority of licences issued through the Directorate of Nuclear Substance Regulation are for the possession and use of nuclear substances and radiation devices. A comprehensive evaluation of the licensing process was conducted in 2016 as the first part of the implementation strategy to streamline the application process and reduce the number of licences required. The revised licensing process will be implemented in 2017. It will be accompanied by an updated version of [REGDOC-1.6.1, Licence Application Guide: Nuclear Substances and Radiation Devices](#), which was published in May 2017 and which provides greater clarity and simplified requirements for applicants. Due to the number of licences and the volume of ongoing work, changes to the licensing approach must be carefully considered to minimize the impact on licensees.

The number of licences issued by sector is shown in table 2 and the distribution of licences by select groups is provided in figure 2. Most licensees, as represented by the industrial sector, perform one licensed activity and, therefore, require only one CNSC licence. Hospitals tend to conduct various licensed activities, such as diagnostic nuclear medicine, cancer therapy, production and processing of nuclear medicine isotopes and human research. These disparate activities are covered under specific CNSC licences which reflect the unique characteristics of such uses. As a result, hospitals typically hold more than one CNSC licence. Moreover, a number of provinces are in the process of amalgamating the administration of

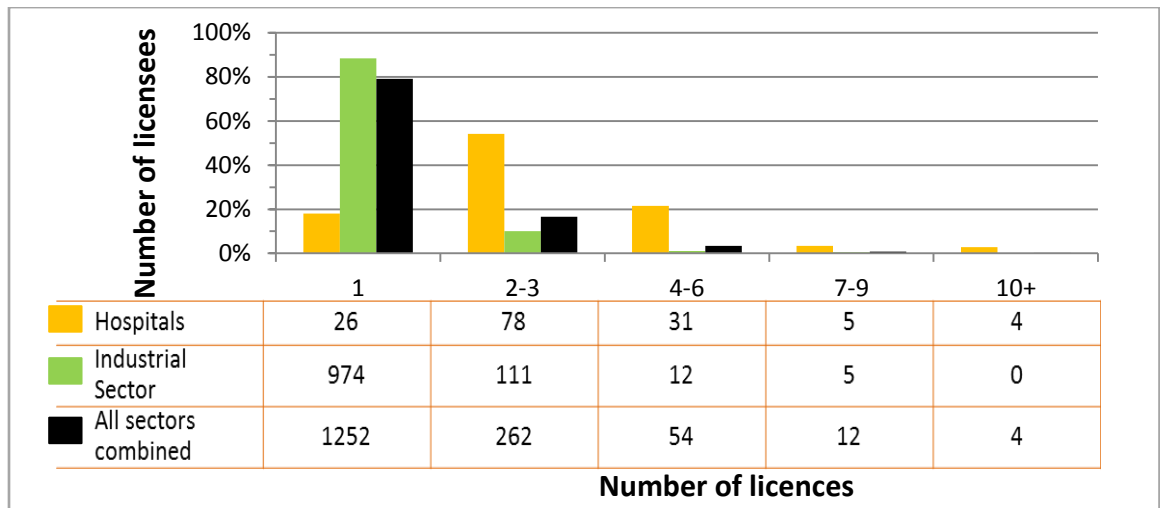
several hospitals under new authorities. CNSC staff work with these licensees to ensure that there is the appropriate level of regulatory control while minimizing administrative burden wherever possible, meaning the workload for CNSC staff has not changed significantly as a result of licence consolidation.

As stated in the previous paragraph, the workload of the CNSC staff remained the same while the number of licences issued by the DNSR continues to decrease. This is driven by a combination of licence consolidation strategies put in place at the CNSC and changes in the industry, including mergers and acquisitions.

Table 2: Number of licences by sector, 2012–16

Sector	2012	2013	2014	2015	2016
Medical	561	552	536	494	470
Industrial	1,451	1,440	1,398	1,349	1,308
Academic and research	253	232	229	207	208
Commercial	248	256	248	245	247
Total	2,513	2,480	2,411	2,295	2,233

Figure 2: Distribution of licences, comparison of hospital licensees against licensees in the industrial sector and all sectors combined



3.3 Certification of prescribed equipment

An application for certification must be submitted to the CNSC before the prescribed equipment can be used in Canada. CNSC staff who conduct the technical evaluations of applications for certification are accredited as professional engineers as part of their job requirements. Upon receipt of an application, CNSC staff conduct a thorough technical review of the information contained in the submission to determine if:

- the radiation device, Class II prescribed equipment or transport package meets all CNSC regulatory requirements and is safe to use
- adequate measures are in place in respect of their use to protect the environment, national security, and the health, safety and security of persons

A CNSC quality assurance program, in the form of a peer review by another CNSC staff member, is in place for the review of new applications for certification of prescribed equipment and those where significant changes are made to the original design.

If satisfied that the design meets the above requirements, the Commission, or a designated officer authorized by the Commission, may issue a certificate for the radiation device, Class II prescribed equipment or transport package based on the recommendation of the CNSC staff members who conducted the technical evaluations.

If the design does not comply with the above requirements or if a certified model is found to be unsafe, the designated officer will contact the applicant and all affected parties, such as users in the case of a certified model, to inform them of the decision to either not certify the new model or to decertify a currently certified model. In these cases, the CNSC will provide the applicant and affected parties an opportunity to be heard in accordance with the process specified in the regulations.

Regulatory documents [REGDOC-1.5.1, *Application Guide: Certification of Radiation Devices or Class II Prescribed Equipment*](#) (under revision, previously [RD/GD-254](#)) and [RD/GD-352, *Design, Testing and Performance of Exposure Devices*](#) outline CNSC expectations for the certification of radiation devices and Class II prescribed equipment, while [RD/GD 364, *Joint Canada - United States Guide for Approval of Type B\(U\) and Fissile Material Transportation Packages*](#) (currently under review), outlines CNSC expectations for the certification of transport packages.

3.4 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 2016, the CNSC certified 115 new exposure device operators (EDOs) and renewed the certifications of 340 others. EDOs must renew their certification every five years to ensure they maintain the knowledge and skills required to operate an exposure device safely.

The CNSC EDO-certification program is designed to ensure the continued competency of the operator, and maintain the safety and security of persons and devices when working with exposure devices. Certified individuals must demonstrate the ability to:

- handle, transport, store and operate exposure devices and any accessories to the devices safely and securely
- properly utilize radiation detection and monitoring equipment

- understand the obligation to comply with all relevant regulatory requirements

Regulatory document [REGDOC-2.2.3, Personnel Certification: Exposure Device Operators](#) and the CSA Group document [CSA PCP-09 Certified Exposure Device Operator Personnel Certification Guide](#) outline the CNSC's requirements and guidance for certification as an EDO and for renewal of an EDO certification.

The CNSC may take regulatory action if an EDO is found to be operating contrary to safety protocols and conditions, or if an EDO is causing undue risk to the public or the environment. No EDOs were decertified in 2016.

3.5 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 all regulatory expectations are met.

There are two components to the RSO certification process:

- an assessment of the candidate's capabilities to perform the duties of the position, based on the submitted application
- an assessment of the candidate's knowledge of the licensed activities, based on an examination

RSO candidates must possess certain qualifications before they can be considered for certification. For most Class II licensed activities, candidates must have at least a bachelor's degree in engineering or science from a recognized university.² Alternative education qualifications may be reviewed on a case-by-case basis.

If the candidate is able to clearly demonstrate their knowledge as it relates to the RSO position within their organization, the Commission or a designated officer authorized by the Commission may certify the candidate in the position of RSO.

The process for certification of Class II RSOs, along with guidance for applicants, is outlined in [REGDOC-2.2.3, Personnel Certification: Radiation Protection Officers](#).

In 2016, the CNSC certified 22 applicants as Class II RSOs. No Class II RSOs were decertified in 2016. The CNSC has certified 212 Class II RSOs since 2010.

3.5.1 Class II RSO examination

In 2016, the CNSC used an online examination for the first time to certify Class II RSOs.

The content of the examination focuses on five subjects:

- relevant provisions of the NSCA and its ensuing regulations

² Exceptions may be made for certain lower risk activities, such as the operation of mobile industrial accelerators and oil well logging accelerators.

- principles of radiation safety
- radiation physics
- operational activities and facilities which are to be licensed by the CNSC
- radiation protection program of the facility

The content of the examination is tailored to:

- the operational risks of the licensed activity
- the organization's policies and procedures
- the candidate's academic background and work experience

3.6 RSO appointment for nuclear substances and radiation device licences

There are approximately 1,860 RSOs appointed for nuclear substances and radiation device licences. The designation of an RSO for nuclear substances and radiation devices licences is the responsibility of the applicant authority, the person accountable for the management and control of the licensed activity. The RSO is the person the CNSC will contact about radiation safety and compliance matters. The appointment of these RSOs does not involve a certification process.

The CNSC requires the RSO's qualifications be included in a licence application and will determine if the RSO has sufficient knowledge and expertise with regard to the applicant's proposed activities. The RSO may be a consultant hired by the applicant to carry out this role, provided that the consultant is clearly designated by the applicant authority to do so. Such information must be communicated to the CNSC as part of the licence application process. Alternate RSOs may be utilized where a licensee has multiple locations of licensed activity.

Unless otherwise noted by the applicant authority, the RSO will be considered to have the authority to act for the applicant and will have signing authority for all matters encompassed by the CNSC licence.

In 2017, CNSC staff started reviewing the oversight process of RSOs that are appointed (i.e., those that do not need to sit and pass an examination) to identify factors that may lead to greater success in that position. This process will be undertaken using internationally accepted methods and will be designed with the assistance of experts internal and external to the CNSC.

In addition to the evaluation project, the CNSC is producing a document that will provide greater guidance to those people performing in the role of RSO as to the CNSC expectations for individuals occupying the position of RSO. Publication of this document is tentatively scheduled for the end of 2018.

For high-risk activities, CNSC staff perform additional verifications. They meet with the applicant RSO and the applicant authority during a pre-licensing visit to verify the RSO's knowledge of the company's radiation protection program and confirm the applicant understands their obligations as a licensee. Staff plan visits and prepare the interview following review of the application and the applicant's radiation protection program. During the visit, CNSC staff ensure the licensee understanding of the radiation safety program that has been committed to and

review the location of the proposed licensed activities while ensuring that candidates have strong radiation safety knowledge as well as advanced training in operational and emergency procedures. If it is deemed that the appointed RSO does not have adequate knowledge, the licensing decision will be pending on the appointment of a suitable RSO. In 2016, CNSC staff performed eight pre-licensing visits for prospective nuclear substance and radiation device licensees.

3.7 Licensing and certification decisions

CNSC designated officers made a total of 2,805 licensing and certification decisions related to activities covered in this report in 2016. The majority of these were licensing decisions, as shown in Table 3.

There was a significant increase in the number of certification activities in 2016 due to the expiry and renewal of a higher-than-average number of device certificates. This trend will continue into 2017. In addition, there was an increase in the number of EDO certification decisions as existing EDOs sought renewals as per CSA PCP-09 – Certified Exposure Device Operator Personnel Certification Guide.

Table 3: Licensing and certification decisions in 2016, all sectors combined

Type of decision	Number of decisions
Licensing (issuance of new licences, licence renewals, licence amendments, licence revocations and licence transfers)	2,185
Certification of prescribed equipment (radiation devices, Class II prescribed equipment and transport packages)	143
Certification of EDOs (issuance of new certification and renewal of certification)	455
Certification of Class II RSOs	22
Total	2,805

3.8 Compliance verification and enforcement

The CNSC verifies compliance by conducting site inspections and reviewing licensee documentation and operational activities. Licensees are required to report routine performance data through annual compliance reports and the occurrence of specific types of events. In addition, the CNSC conducts investigations of unplanned events, public complaints or accidents involving nuclear substances.

The CNSC uses a graded approach to enforcement to encourage compliance and deter future non-compliances. When a non-compliance (or a continued non-compliance) has been identified, CNSC staff assess its risk and safety significance to determine appropriate enforcement action. The chosen enforcement action is commensurate with the risk that the non-compliance presents to the environment, the health and safety of workers and members of the public, and to national security. Enforcement actions vary with non-compliance severity, and can include orders and administrative monetary penalties. Each is a discrete and independent response to a non-compliance.

Escalated enforcement actions were taken against licensees in the medical, industrial, academic and research, and commercial sectors in 22 instances in 2016. The majority were in response to inspection findings.

In 2016, CNSC staff conducted 1,452 inspections to verify compliance with CNSC regulatory requirements, including 228 security inspections to verify compliance against the requirements of [REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources*](#).

As part of CNSC staff efforts to consolidate compliance activities, the CNSC transferred compliance verification activities related to the import and export of high-risk sealed sources in the sectors covered in this report from the Directorate of Security and Safeguards to the Directorate of Nuclear Substance Regulation. In 2016, inspectors from the Directorate of Nuclear Substance Regulation took on this responsibility and inspected three licensees for their compliance to licence conditions related to the export of high-risk sealed sources. Two of the three were non-compliant with at least one of the requirements.

The CNSC continues to enhance the tools available to its inspectors. Recently this has included further integration of the Mobile Inspection Kit tablets into inspections, developing and updating available tools for performance-based inspections, and reviewing and updating inspector training and guidance documents to reflect current practices.

3.9 Stakeholder engagement

Clarity of requirements is one of the CNSC's corporate priorities. Stakeholder engagement and outreach are two tools the CNSC uses to meet this priority. Outreach and engagement lead to an increased awareness and better understanding of the regulatory process and requirements. These, in turn, lead to increased workplace safety. CNSC staff takes all opportunities to perform outreach, including while on inspection.

Outreach sessions held throughout Canada in 2016 provided licensees and other persons the opportunity to interact with the regulator outside the scope of an

Figure 3: CNSC inspectors inspecting an isotope production facility (Source: CNSC)



inspection or licensing activities. Some of the key sessions are described below. In addition to outreach sessions, CNSC staff delivered presentations at various conferences in Canada and around the world to share information on developing regulatory topics.

3.9.1 Outreach sessions

Since 2009, the CNSC has offered an outreach program for licensees that use nuclear substances and prescribed equipment. The presentations made by CNSC staff and discussions associated with outreach are meant to inform licensees and other persons regulated by the CNSC on recent and upcoming regulatory changes, and provide education regarding the CNSC's expectations for licensing and compliance requirements.

In 2016, the CNSC outreach program addressed recent and upcoming regulatory developments and other areas of regulatory focus, including inventory control and possession of disused sources, and upcoming changes to the [Radiation Protection Regulations](#), specifically with regard to measuring doses to the eye. These outreach sessions were given in 15 cities across the country and were attended by more than 400 people.

3.9.2 Newsletters

In 2009, the CNSC introduced the DNSR Newsletter as an outreach vehicle for disseminating regulatory and safety information to licensees that use nuclear substances and prescribed equipment in Canada. The newsletter articles address various regulatory compliance issues and support the regulator's commitment to keep both licensees and the public informed. Regular editions of the newsletter provide valuable information to licensees in all sectors; special editions focus on either a specific subsector or an area of regulatory interest.

All newsletters are posted on the [CNSC website](#) and are sent to recipients on the CNSC subscription list.

Three DNSR Newsletter editions were prepared in 2016: two regular editions and one special edition, which focused on measures for the security of sealed sources in accordance with the requirements and guidance indicated within REGDOC-2.12.3. Topics included in the regular editions of the newsletter covered CNSC's support to first responders during the forest fires in Fort McMurray, a revision to the classes of nuclear substances for contamination control, clarification on the requirement for the retention of records for servicing work performed on radiation devices, highlights on relevant regulatory framework developments and upcoming consultation periods, and a summary of events reported to the Commission.

In May 2016, the CNSC published a [special article](#) to clarify CNSC expectations of licensees during skin contamination events. The article set a limit beyond which skin contamination must be reported to the CNSC, provided a flow chart to assist licensees in responding to skin contamination events, and offered guidance on how to calculate doses to the skin.

3.9.3 Industrial radiography working group

In 2009, a CNSC/industrial radiography working group was established to foster improved communications between the CNSC and the industry. The working group meets twice a year to discuss best practices and safety performance, and provides a forum in which stakeholders can stay informed of new developments from both technical and regulatory perspectives. In 2016, both meetings of the industrial radiography working group took place in Mississauga, Ontario. Discussions centered on items of interest to the industrial radiography community and planning an outreach strategy for the next annual meeting.

The CNSC holds two separate annual meetings with the radiography industry. In 2016, the meetings were held in Nisku, Alberta, and Ottawa, Ontario. The meeting in Nisku was attended by approximately 54 participants; the meeting in Ottawa was attended by 17 participants. CNSC staff use these meetings to address recent and upcoming regulatory developments and discuss other areas of regulatory focus. The meetings act as venues for industry members to communicate with CNSC staff, ask questions and share information on best practices and lessons learned. During the 2016 meetings, CNSC staff delivered presentations on common licensing roadblocks and security of nuclear sources, and provided updates on emergency situations and CNSC expectations for event reporting, compliance expectations during field inspections of industrial radiography licensees and the EDO certification program. Members of industry gave presentations to their peers on the basics of incident investigation.

3.9.4 Canadian Radiation Protection Association working group

In 2014, a working group was established between the CNSC and the Canadian Radiation Protection Association (CRPA). In 2016, this working group continued its efforts to promote strong radiation safety cultures within licensed activities.

For almost three decades, CNSC staff have delivered regulatory-focused presentations and participated in regulatory workshops at the CRPA's annual conferences. At the 2016 conference in Toronto, Ontario, CNSC staff delivered presentations on radiation doses to the eye and the activation of air and concrete in cyclotron facilities.

3.9.5 Canadian Organization of Medical Physicists

The Canadian Organization of Medical Physicists (COMP) represents medical physicists working in radiotherapy facilities in the medical sector. Many certified radiation safety officers at Class II nuclear facilities are members of COMP.

CNSC staff attended the 2016 COMP Annual Scientific Meeting in St. John's, Newfoundland and Labrador. CNSC staff delivered a presentation focused on the application of REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources* in the context of Class II nuclear facilities in the medical sector. Tangible technical and administrative security measures were discussed, as was the importance of human behavior in ensuring the safety of nuclear substances.

3.9.6 CNSC-Class II/CRPA/COMP working group

The CNSC-Class II/CRPA/COMP (C3) working group was established in late 2015, with the mission of providing a forum for communication and information sharing among stakeholders in the regulated Class II community. The group met three times in 2016. Topics discussed included: quality control test frequencies for mandatory Class II safety systems, implementation of REGDOC-2.2.2, *Personnel Training, version 2*, promoting licensee internal and external peer audits as a mechanism for ensuring regulatory compliance, potential pathways for incorporating peer audits into the compliance verification framework, and knowledge versus competency as it pertains to the role of RSO.

3.9.7 Portable gauge workshops

Established in 2014, the CNSC regulatory workshop for portable gauge licensees was created to promote compliance and safety culture within this industrial subsector. The workshops consist of presentations delivered by CNSC staff, a question-and-answer session and general discussions. The presentations focus on radiation protection, compliance programs, worker training, transport of nuclear gauges and reporting requirements. CNSC staff developed this workshop in response to negative compliance trends along with the escalation of enforcement actions against licensees in this subsector.

CNSC staff offered 16 portable gauge workshops in 11 locations across Canada in 2016. Approximately 171 people attended these workshops. 2016 marked the final year of this initiative. CNSC staff are currently evaluating the program to determine if it should continue in its current format, or if other approaches will be used to target this subsector.

3.9.8 Nuclear medicine outreach

At the request of RSOs in the Montréal, Quebec region, CNSC staff participated in a half-day workshop targeting the nuclear medicine sector. Participants and CNSC staff discussed topics of interest to the nuclear medicine community, including items relating to skin contamination, the revision of the licence application guide, classification of nuclides and shipping empty packages. The workshop was attended by 30 RSOs.

4 REGULATORY DEVELOPMENTS

This section provides details of the regulatory developments that took place in 2016 relating to regulatory programs for licensees covered in this report.

4.1 New licence conditions for nuclear substance and radiation device licensees

In 2016, three licence conditions applicable to nuclear medicine licensees were revised. These licence conditions only apply to licences issued by designated officers.

- *LC 2583 – Patient Room Reassignment* provides specific tasks to compete and criteria to meet regarding dose rates before a hospital room that was used by a patient that received a nuclear medicine treatment can be reassigned to a non-nuclear medicine patient. The revision added criteria pertaining to patient washrooms.
- *LC 2110 – Area Classification – Nuclear Medicine* was revised to clarify the requirements around classifying rooms or spaces in a hospital for nuclear medicine to include areas where nuclear substances used for nuclear medicine procedures can be prepared and administered and procedures performed.
- *LC 2600 and LC 2601 – Thyroid Screening and Thyroid Bioassay* were revised to expand the list of iodine isotopes, the uses of which require the worker to undergo thyroid screening procedures. The change was made reflect the increased use of various radioiodine isotopes within medical and academic and research sectors.

4.2 Guidance on the handling of the deceased implanted with nuclear substances

Following a request for clarification by stakeholders, CNSC staff have developed guidance for the handling of the deceased that have been implanted or injected with nuclear substances as well as those that have inhaled or ingested nuclear substances. The guidance is intended for coroners and funeral home and crematorium workers. It can be used when providing services to families of deceased patients who have undergone diagnosis or therapy using nuclear medicine or manual brachytherapy. It will inform readers of the risks that are present (minimal in all cases) and recommend best practices to help keep doses to the workers, families and the public at ALARA levels. REGDOC-2.7.3, *Radiation Protection Guidelines for Safe Handling of Decedents* will be published for consultation in 2017. In preparation, CNSC staff started conducting information sessions on the topic in 2016 to increase awareness about the forthcoming guideline, including presenting at the conference of the British Columbia Funeral Association in May 2016.

4.3 Regulatory focus in 2017

The CNSC's focus in 2017 continues to be on effective regulatory oversight and continuous improvement. Activities will include:

- increased use of Type I inspections for compliance verification of large licensees
- clarifying expectations for reportable events with the development of regulatory document REGDOC-3.1.2, Part II, *Reporting Requirements for Nuclear Substances and Radiation Devices*
- enhanced oversight of RSOs across all sectors
- increased focus on preparing licensees with Category 3, 4 and 5 sealed sources to be compliant with the expectations of [REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources*](#), which will come into effect May 31, 2018
- augmented focus on compliance verification of fixed gauge licensees with the licence condition for vessel or hopper entry
- implementing regulatory oversight programs for new devices and technologies, particularly in the healthcare sector
- increased activity in certification of prescribed equipment and radiation devices due to the expiry of many existing certificates

5 SAFETY PERFORMANCE – ALL SECTORS COMBINED

This section provides an overview of the overall performance of the industry sectors covered in this report.

5.1 Overall safety assessment

CNSC staff conducted 1,452 inspections across all sectors in 2016 to verify compliance with CNSC regulatory requirements, including 228 security inspections to verify new security requirements and three inspections related to the export of high-risk sources. All sectors continued to demonstrate adequate performance within all safety and control areas (SCAs). The majority of inspected licensees in 2016 were found to be compliant in the four SCAs covered in this report:

- In management system, 97.5 percent of licensees ensured that adequate processes and programs were in place to achieve their safety objectives.
- In operating performance, 87.4 percent of licensees made adequate provisions for the health, safety and security of persons, and protection of the environment.
- In radiation protection, 84.6 percent of licensees continued to ensure that exposure of workers and the public to ionizing radiation remained as low as reasonably achievable.
- In security, 93.4 percent of licensees demonstrated that they have adequate provisions in place to prevent the loss, sabotage, illegal use, illegal possession or illegal removal of sealed sources and prescribed equipment in their care and control.

For those in possession of high-risk sealed sources, security inspections were conducted in 2016 to measure compliance with the requirements of [REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources](#). Of those inspected, 79 percent (181 of 228 inspections) were found to be compliant with the regulatory requirements. Licensees have put in place measures to correct all non-compliances identified during these inspections. The majority of non-compliances for security requirements were related to trustworthiness and reliability verification of employees, and licensee response protocols.

Effective doses to workers continued to be below regulatory limits in 2016, consistent with previous reporting years. Doses for 62,013 workers were reported to the CNSC in the four sectors covered in this report. Of those workers, 22,606 were designated as nuclear energy workers (NEWs) while 39,407 were not designated as NEWs.

One NEW received an equivalent dose above the regulatory limit for extremities of 500 millisieverts (mSv) as a result of an event that was reported to the Commission in December 2016. Further details on this event are provided in section 5.7.2.

A member of the public received a whole-body dose in excess of the regulatory limit after taking a ride from a ride-sharing website in a vehicle where the driver

was also carrying packages containing nuclear substances. Further details are provided in section 5.7.6.

For 2016, CNSC staff assessed all 139 events reported by the licensees covered in this report. Reported events have been ranked using the [International Nuclear and Radiological Event Scale \(INES\)](#). Of these, 136 were ranked as level 0 (no safety significance), two were ranked as level 1 (anomaly) and one was ranked as level 2 (incident). The level 2 event involved the NEW who received a dose that exceeded the applicable regulatory limit mentioned above.

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

In 2016, six licensees received a rating of unacceptable in at least one SCA. The CNSC took escalated enforcement action in each case, issuing an order, an administrative monetary penalty (AMP) or both.

5.1.1 Licensees with compliance ratings below expectations

The CNSC takes a licensee's compliance history into account when determining the inspection schedule. When a licensee repeatedly performs below expectations, the CNSC may increase the regulatory oversight of the licensee. This could include additional reactive inspections to monitor ongoing compliance or increased inspection frequency.

In 2016, 472 inspections did not meet compliance expectations in at least one SCA. The CNSC reviewed past performances of these licensees and noted that 12 percent of these same licensees were rated below expectations or unacceptable in that same SCA on their last inspections. This is consistent with industry performance in general, however the CNSC will track trends in this area in future editions of this report to assess trends.

5.2 Management system

The management system SCA covers the framework that establishes the processes and programs required to ensure that an organization achieves its safety objectives, continuously monitors its performance against those objectives, and fosters a healthy safety culture.

All sectors demonstrated satisfactory performance within the management system SCA, with 97.5 percent of inspected licensees (1,259 of 1,290 inspections) found to be in compliance with regulatory requirements (see figure 4). A breakdown of the inspection ratings by sector for 2016 is shown in figure 5.

The majority of non-compliances in this SCA included licensees failing to notify the CNSC of changes to their radiation safety officers (RSOs) or applicant authorities within the allotted timelines, failing to keep required records at all work locations, including any temporary work locations, and conducting activities for which they were not licenced (generally, these tasks were administrative in

nature such as using nuclear substances not listed on their licences or possessing radiation device models that did not appear on their licences).

Figure 4: Inspection ratings for management system, 2015–16

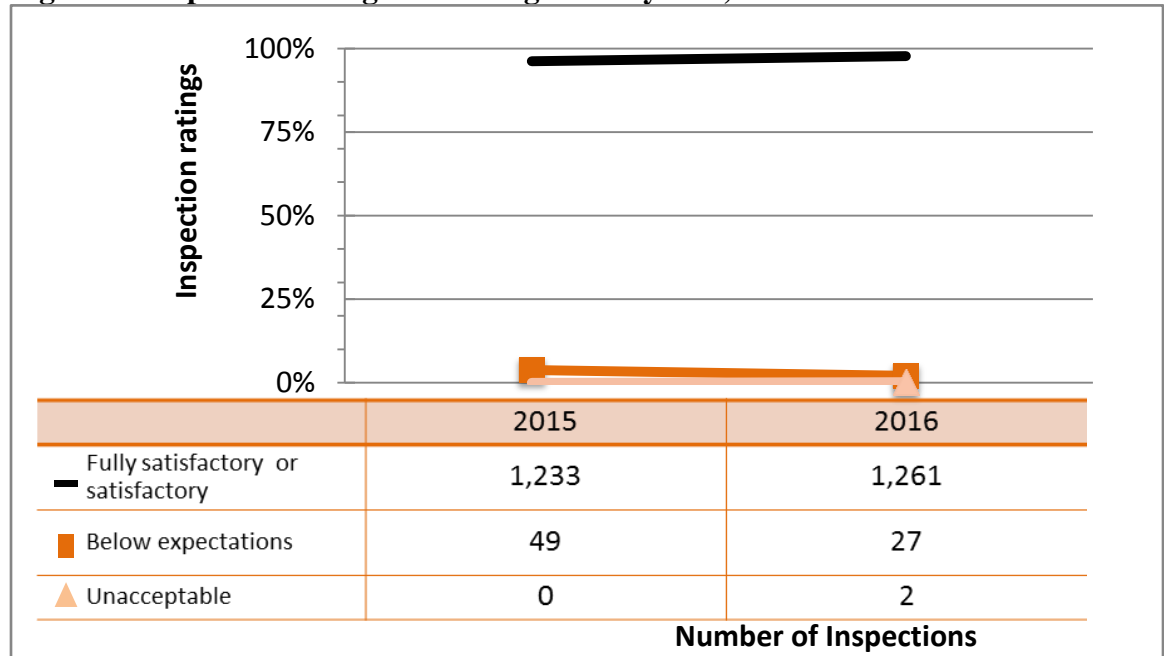
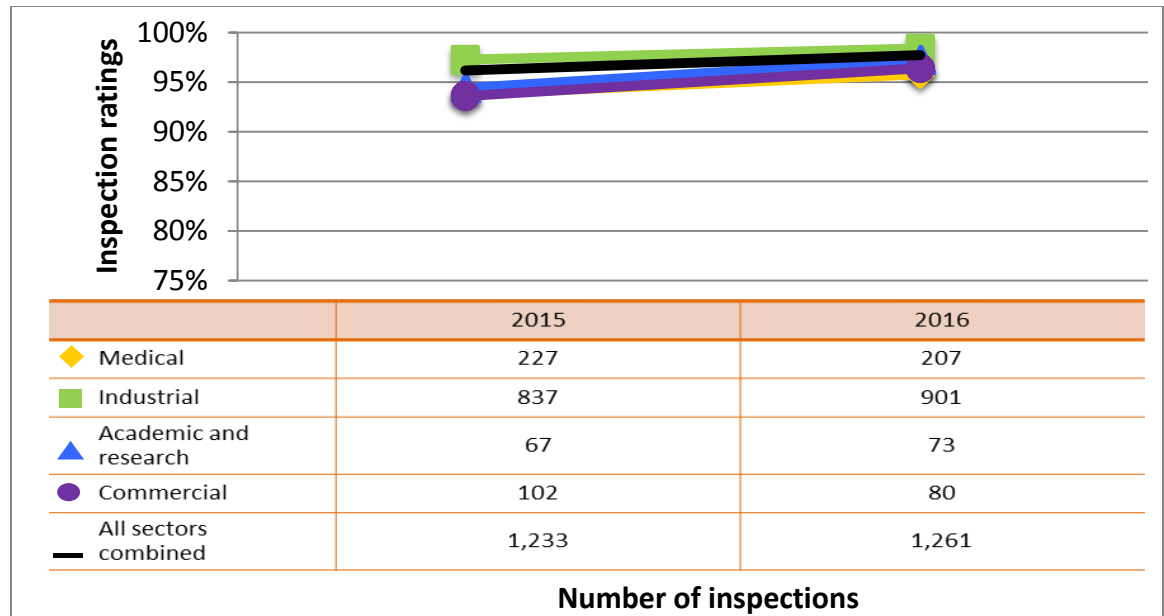


Figure 5: Sector-to-sector comparison of inspection ratings meeting or exceeding expectations for management system, 2015–16



5.3 Operating performance

Operating performance refers to the licensee’s ability to perform licensed activities in accordance with pertinent operational and safety requirements defined in the [Nuclear Safety and Control Act \(NSCA\)](#), its associated regulations

and licence conditions. Licensees are expected to demonstrate that they comply with operational and safety requirements by providing workers with appropriate procedures for the safe use of nuclear substances and prescribed equipment, by ensuring that workers follow procedures, and by maintaining records that demonstrate compliance.

All sectors continued to demonstrate adequate performance within the operating performance SCA in 2016, with 87.4 percent of inspected licensees (1,147 of 1,313 inspections) found to be in compliance with regulatory requirements. This is down slightly from 2015 when 90.6 percent of licensees were in compliance.

Five inspections resulted in a rating of unacceptable for the operating performance SCA in 2016. In all cases, inspectors issued orders to the licensees to stop the unsafe work practices and ensure corrective actions were taken immediately. Compliance with regulatory requirements is unacceptable when compliance within the overall SCA is significantly below expectations, or there is evidence of systemic failure in safely conducting activities. Without immediate corrective action, there is a high probability that the deficiencies will lead to an unreasonable risk.

Inspection ratings for all sectors combined are shown in figure 6 and a sector-to-sector comparison appears in figure 7. The academic and research sector showed significant improvement in this SCA in 2016 compared to 2015. It has rebounded from the downward trend it had been following since 2013. All other sectors experienced a slight decrease in the SCA rating year-over-year, but remained within the range observed over the past five years.

The most common non-compliances in this SCA included failure to comply with regulatory requirements related to workers' responsibilities to following licensee procedures and use equipment provided by the licensee, following procedures in the documents appended to the licence, and keeping training records of employees.

Figure 6: Inspection ratings for operating performance, 2012–16

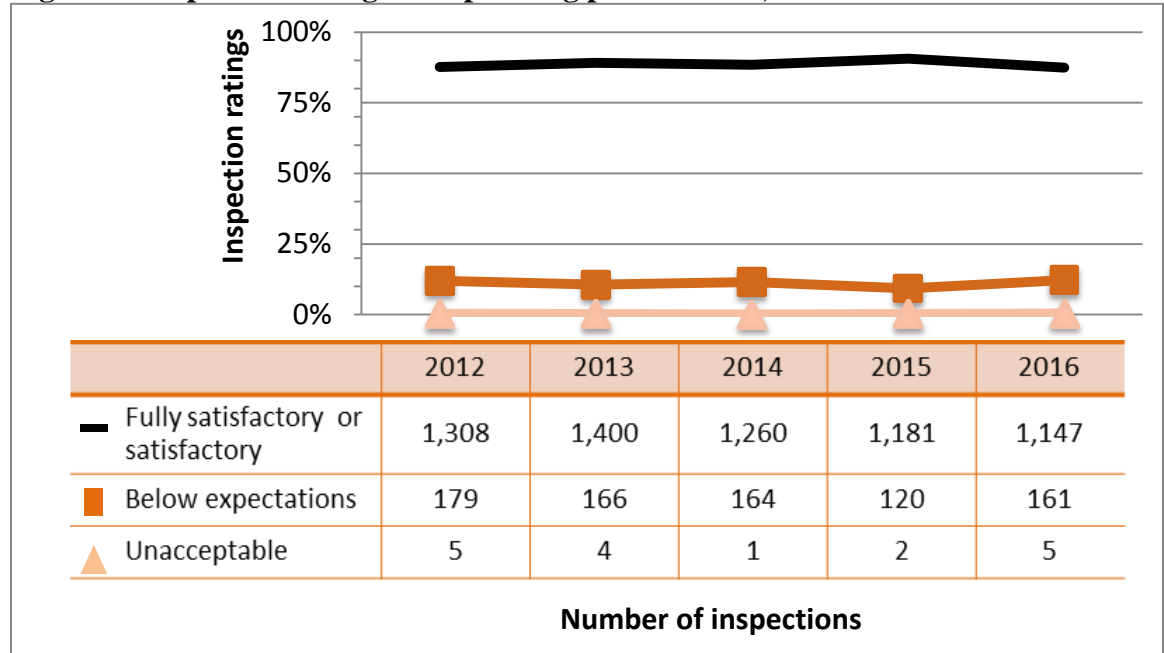
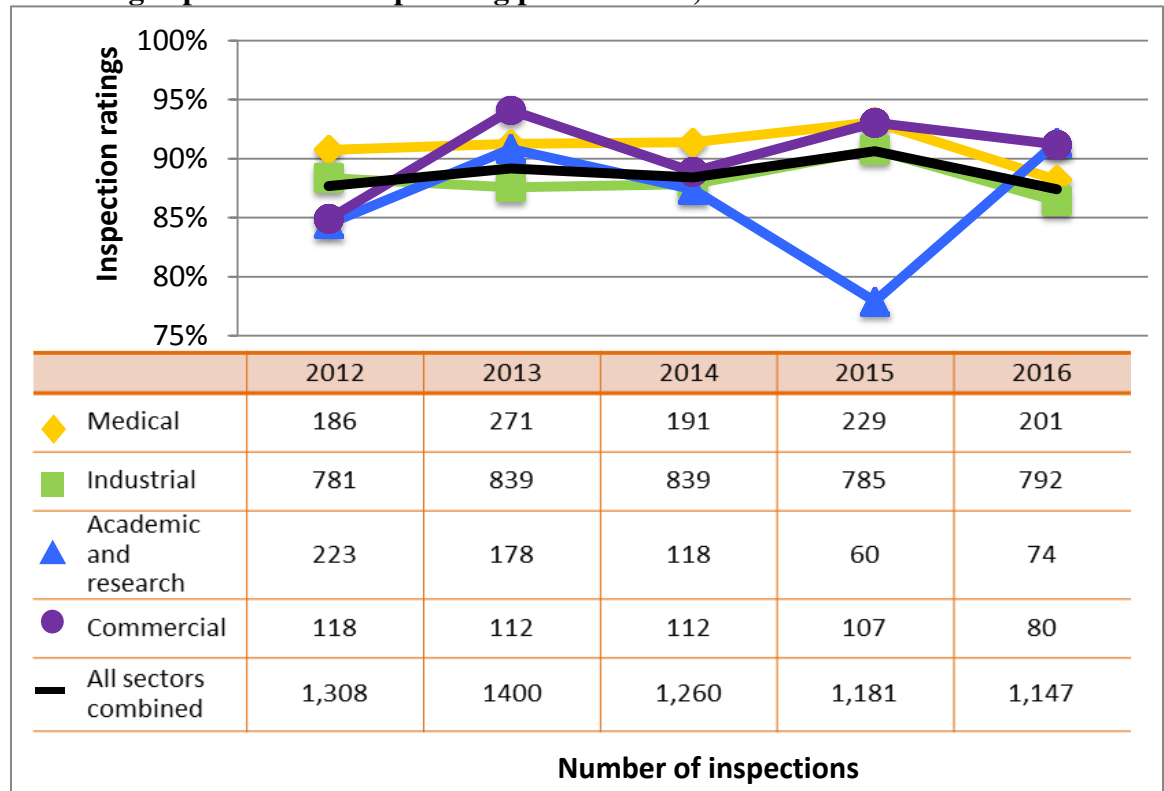


Figure 7: Sector-to-sector comparison of inspection ratings meeting or exceeding expectations for operating performance, 2012–16



5.4 Radiation protection

Radiation protection programs are required for every licensee to ensure that contamination levels and radiation doses received by workers are monitored, controlled and maintained below regulatory dose limits, and kept at levels that are as low as reasonably achievable ([ALARA](#)), social and economic factors being

Figure 8: Verifying the dose rate from a fixed gauge during an inspection (Source: CNSC)



taken into account. Licensees are expected to monitor worker doses, post radiation warning signs, plan appropriately for radiological emergencies, manage oversight of operational activities, institute effective workplace practices that emphasize the use of time,

distance and shielding to minimize exposure to radiation, and use appropriate protective equipment.

While all sectors demonstrated adequate performance within this SCA, with 84.6 percent of inspected licensees (1,108 of 1,311 inspections) found to be compliant with regulatory requirements, this figure represents a lower level of compliance than has been observed since 2013. (See figure 9).

In 2016, four inspections resulted in unacceptable ratings for radiation protection. Three of these inspections also had unacceptable ratings for the operating performance SCA. In all four cases, the

CNSC inspectors issued an order to immediately stop the unsafe work practices and to implement corrective measures.

Inspection ratings for all sectors combined are shown in a sector-to-sector comparison presented in figure 10. After gains made in performance in this SCA up to 2014, the medical sector performance in this SCA has decreased over the past two years.

The majority of non-compliances included failing to use calibrated radiation survey meters, failing to implement radiation programs that keep doses to workers and the public ALARA, and failure to post radiation warning signs as required.

Figure 9: Inspection ratings for radiation protection, 2012–16

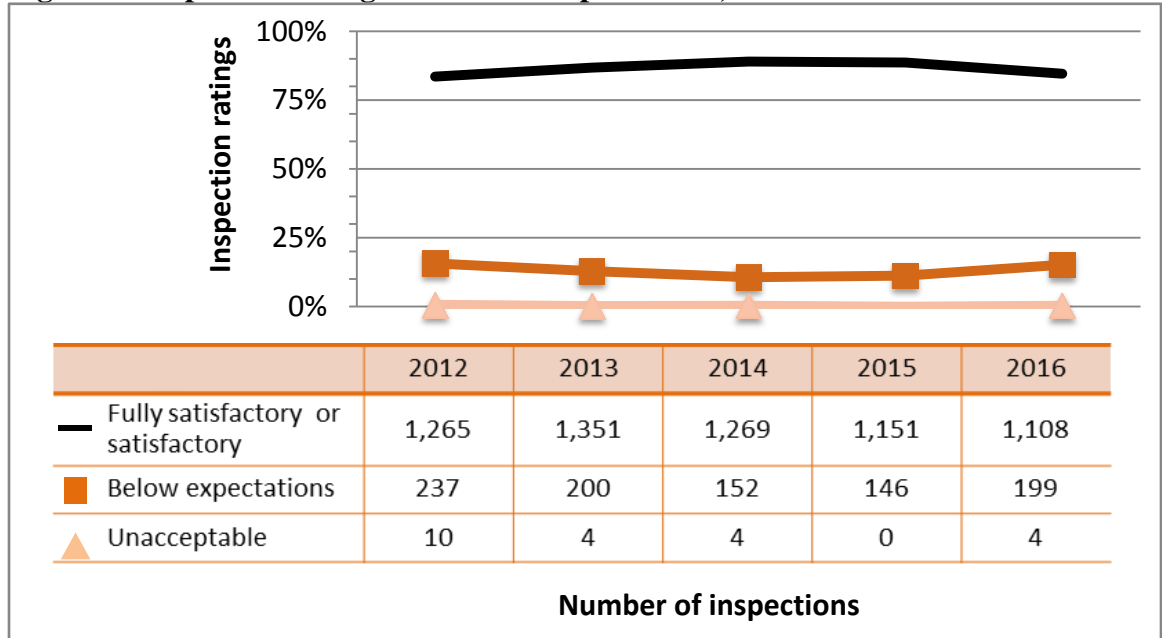
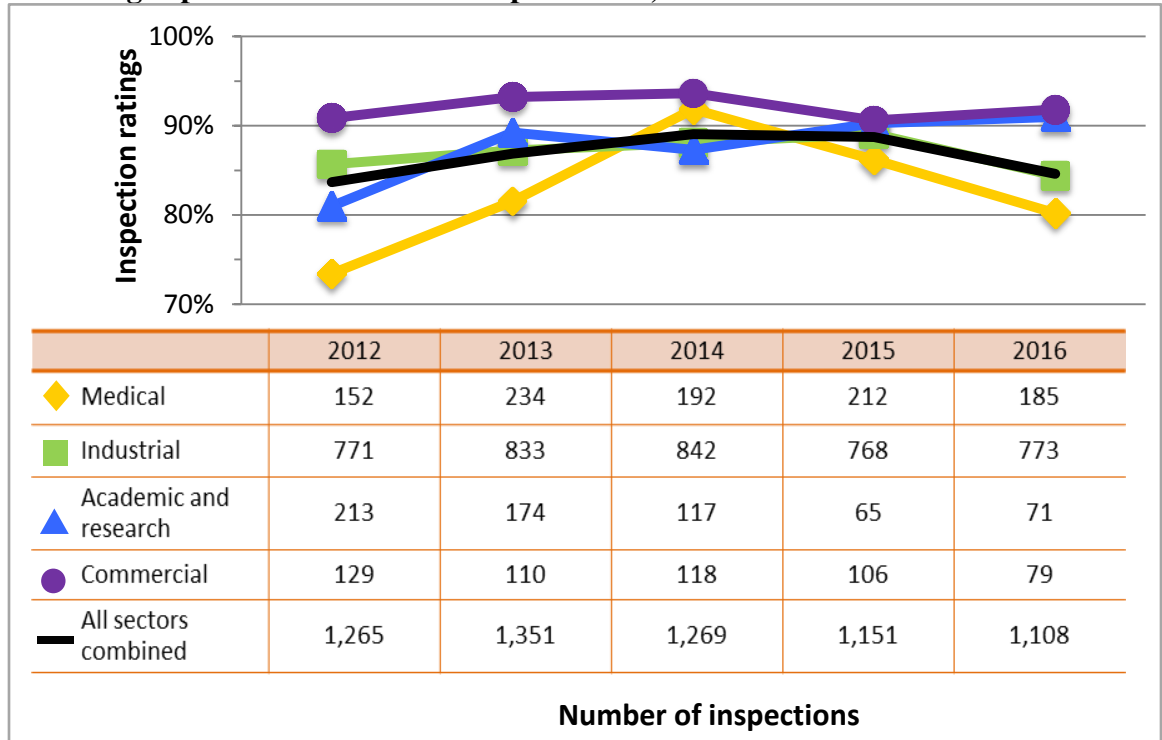


Figure 10: Sector-to-sector comparison of inspection ratings meeting or exceeding expectations for radiation protection, 2012–16



5.5 Security

Licenses are required to have in place physical security measures, practices and programs to prevent the loss, illegal use, illegal possession or illegal removal of nuclear substances during their entire lifecycle, including while they are in storage

or during transport, as per the NSCA. The extent of the security measures required depends upon the types of nuclear substances used and activities performed by each licensee.

Overall, all sectors showed satisfactory ratings for the security SCA in 2016: 93.6 percent of inspected licensees (1,152 of 1,234 inspections) were compliant with regulatory requirements. One inspection resulted in a rating of unacceptable. The inspector issued an order to ensure corrective actions were taken immediately.

Licensees with high-risk sources are subject to the requirements described in [REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources](#). In 2016, CNSC inspectors conducted security inspections to verify compliance against those requirements. Of those inspected, 79 percent (181 of 228 inspections) were found to be compliant with regulatory requirements applicable to Category 1 and 2 sealed sources. Generally, the licensees have in place basic physical security measures. Non-compliances are usually for administrative requirements introduced with REGDOC-2.12.3, including implementation of a trustworthiness and reliability verification program, alarm testing, and event-response procedures.

Licensees addressed and corrected all non-compliances identified during inspections to the satisfaction of the CNSC. Figure 11 summarizes the performance of all sectors combined for this SCA for 2014 to 2016, while figure 12 provides a sector-to-sector comparison for those three years.

Figure 11: Inspection ratings for security, 2014–16

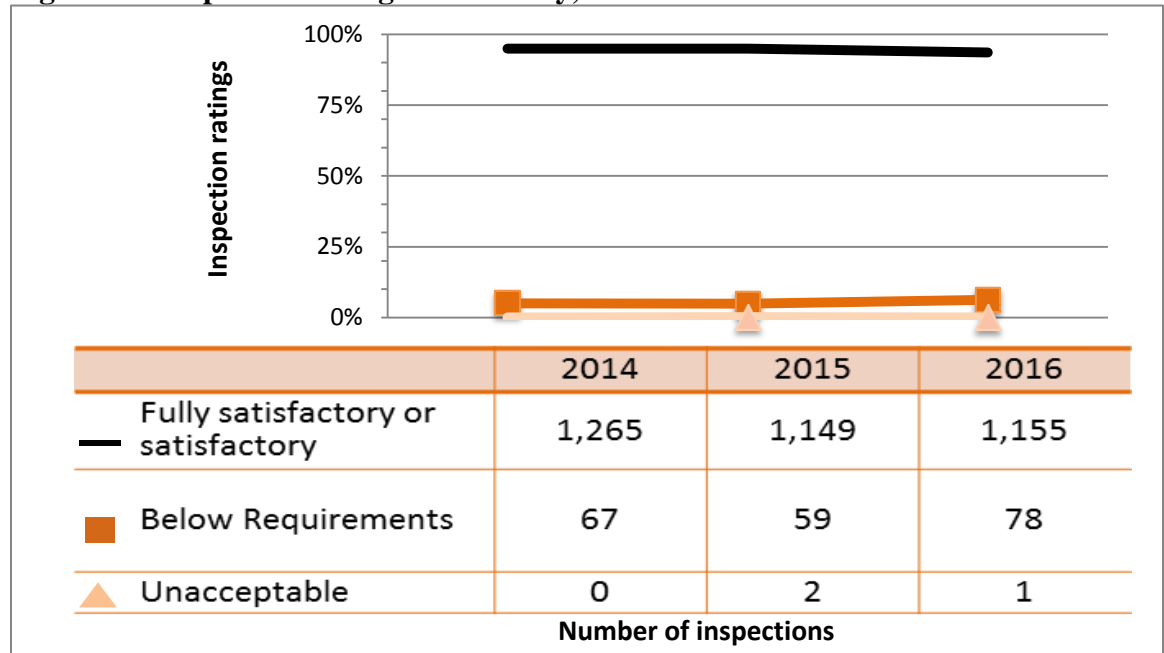
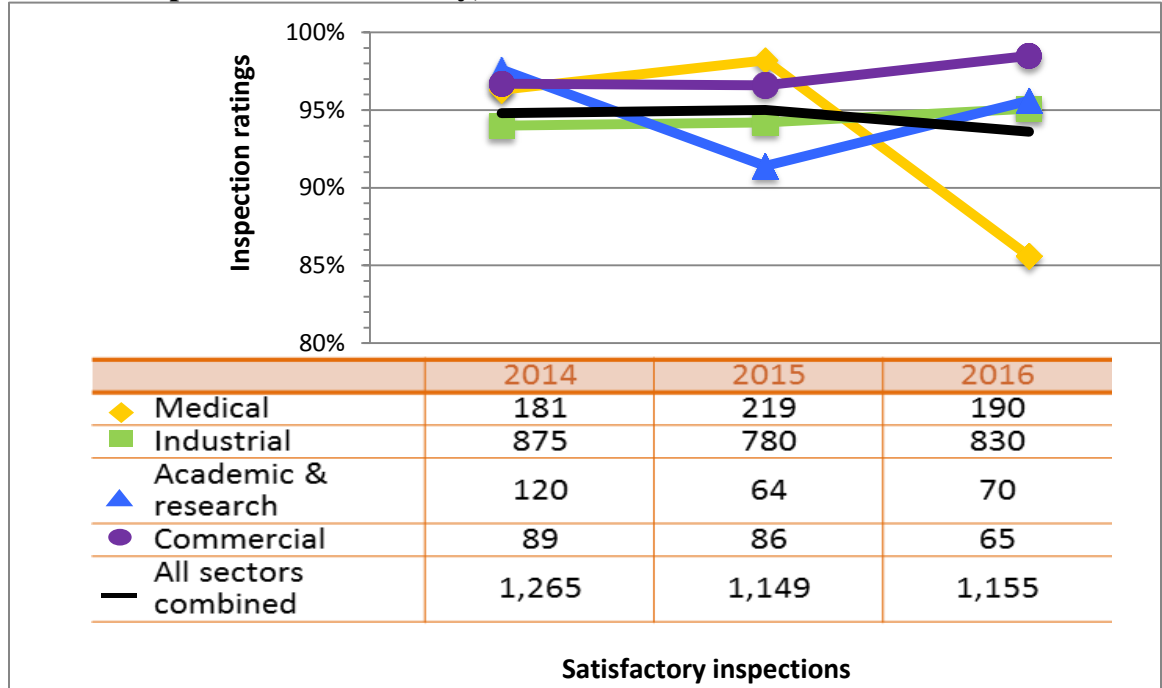


Figure 12: Sector-to-sector comparison of inspection ratings that met or exceeded expectations for security, 2014–16

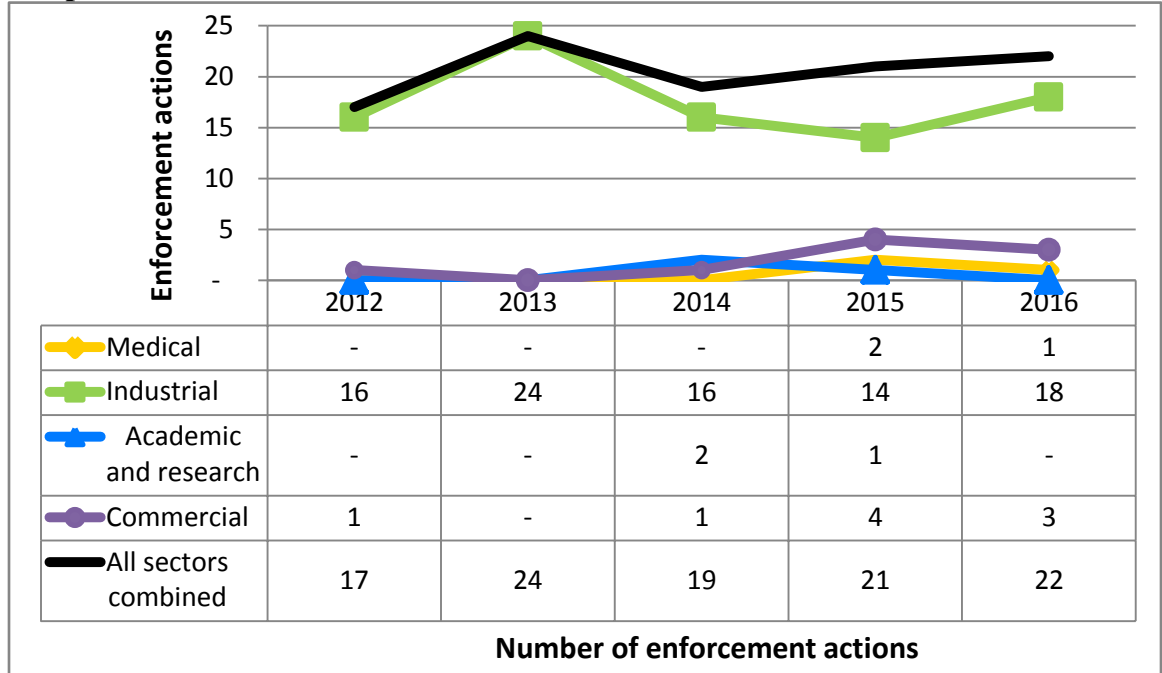


Compliance with the mandatory tracking of high-risk sealed sources was satisfactory in 2016. Of the 150 inspected licensees, 141 (94 percent) were found to be compliant with this requirement. CNSC staff ensured that all instances of non-compliances were adequately addressed by the licensees. The majority of non-compliances for high-risk sealed source tracking requirements were administrative items such as failing to provide notification of shipments or receipts within specified time frames, failing to register location with the CNSC, or providing incorrect location identification for devices or sources. Further information on this topic is available in the [National Sealed Source Registry and Sealed Source Tracking System Annual Report](#).

5.6 Enforcement actions

In 2016, the CNSC took 22 escalated enforcement actions against licensees in the medical, industrial, academic and research, and commercial sectors (figure 13). CNSC staff issued orders directing licensees to take immediate corrective measures in 14 instances. In each case, the licensee immediately complied with the order. Once the CNSC was satisfied that the licensee had addressed the order’s terms and conditions, the order was closed. All orders issued in 2016 are closed. CNSC designated officers issued administrative monetary penalties (AMPs) in eight instances in 2016, all of which have been paid. A breakdown of the 22 enforcement actions is provided for each of the sectors while a summary of orders and AMPs issued by the CNSC in 2016 is provided in [appendix C](#). Further information on regulatory actions, including escalated enforcement actions, taken by the CNSC is also available on the [CNSC website](#).

Figure 13: CNSC enforcement actions³ from 2012 to 2016, sector-to-sector comparison



5.7 Reported events

Licensees are required to have programs in place for the management of unplanned events and accidents. The events that warrant mandatory reporting and the content of the reports are set out in the NSCA, its regulations and the conditions of their licence. CNSC staff review, assess and track all events reported by licensees.

Since 2014, reported events have been ranked using the [International Nuclear and Radiological Event Scale \(INES\)](#), a tool for communicating the safety significance of nuclear and radiological events to the public. This tool allows the establishment of a proper perspective of an event’s safety significance. The scale has been used to classify events at nuclear power plants since 1990 and has been extended over the years to apply to all nuclear industry installations. By 2006, it had been adapted to all events associated with the transport, storage and use of radioactive sources and nuclear substances. Note that the scale is not a tool to compare safety performances among facilities or organizations, but to effectively communicate the safety significance of events.

In 2016, there were 139 events related to nuclear substances reported to the CNSC by licensees in the sectors covered in this report. Of these events, 136 were ranked as INES level 0 (no safety significance) and two were ranked as level 1 (anomaly) based on the quantity of nuclear substances involved and the type of event

³ All 14 orders were issued by inspectors. Five of the eight AMPs were issued following, or in conjunction with, orders.

reported (stolen portable gauges). The remaining event – ranked as level 2 (incident) – occurred when a spill resulted in a NEW received an extremity dose of 1,100 mSv, which is above the regulatory limit of 500 mSv. This event was reported to the Commission on [December 14, 2016](#).

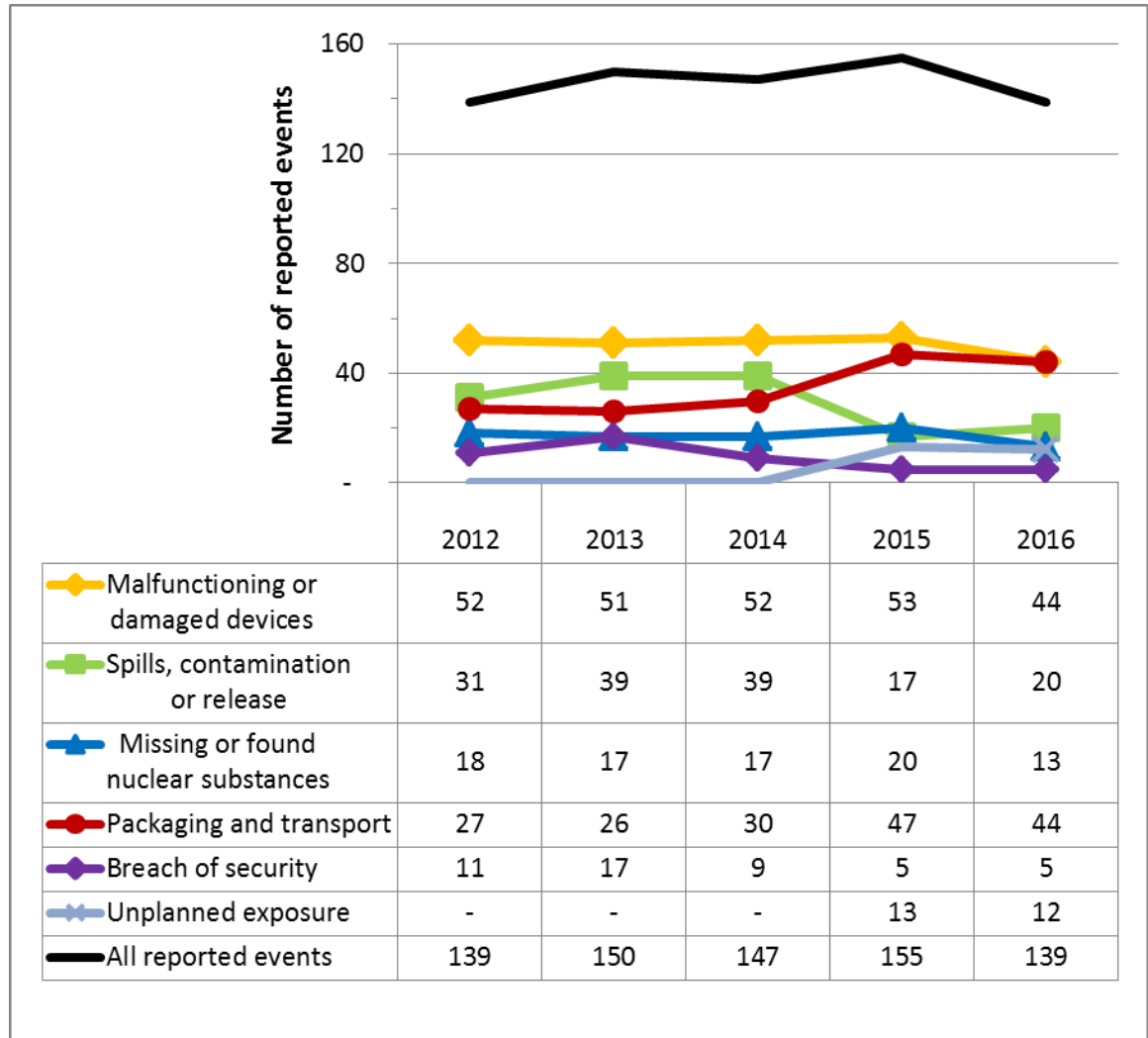
A breakdown of reported events by type is shown in figure 14 and a complete list of all reported events in 2016 is provided in [appendix D](#).

For all of the events reported, the licensees implemented adequate response measures to mitigate the impacts of the events and to limit radiation exposure to workers or any radiological impact on the environment. CNSC staff reviewed these measures, along with licensee corrective actions to prevent recurrence of the events, and found them to be satisfactory.

As part of their final, detailed reports on events, licensees are required to identify probable causes of events and propose corrective actions to prevent recurrences. In many cases, probable causes were related to workers not following procedures. As a result, the majority of measures taken by licensees to prevent recurrence related to retraining staff on procedures and emphasizing the importance of procedural adherence.

In addition to the events related to the use of nuclear substances, there was one occurrence of an injured worker. The licensee reported that a portable gauge operator was injured when he was pinned under his truck at a work site. He was taken to hospital.

Figure 14: Reported events from 2012 to 2016, all sectors combined



Note: Unplanned exposure represents events that have led to non-routine exposures to workers or members of the public. Events of this type were covered under breach of security prior to 2015.

5.7.1 Malfunctioning or damaged devices

There were 44 events related to damaged or malfunctioning devices. Of these, 25 were reported as damaged devices:

- Twelve involved damage to portable gauges. In one case, the gauge was damaged when it fell off the back of a truck. In the remaining cases, damage occurred when the portable gauges were hit or run over by vehicles and equipment at construction sites.
- Two involved damage to fixed gauges. In one case, gauges were damaged by fire.
- Seven involved damage to exposure devices, often following a drop or an impact.
- One involved the crank of an exposure device that was damaged after coming into contact with a hot surface.

- One involved a radiation device damaged when hit by a crane.
- Two involved damaged devices found in storage. One device was a portable gauge, the other an exposure device.

None of the above resulted in damage to the source, or resulted in source leakage.

One licensee reported damaging a sealed source when a radiotherapy seed was cut in half during preparation of a tissue sample. There was no release to the environment or exposure to members of the public as a result of this event.

The remaining 19 events in this category corresponded to malfunctioning devices:

- Ten involved malfunctioning fixed gauges where the shutters failed to close properly or the indicators for the shutters were not functioning properly.
- Six involved malfunctioning portable gauges where the shutters were stuck in the open position.
- Two involved malfunctioning exposure devices where the sealed sources failed to retract into the shielded position.
- One involved a malfunctioning gamma checker gauge where there were problems with the source control crank. This device is used to expose survey meters to known and reproducible radiation fields.

All malfunctioning devices were taken out of service as required by the [Nuclear Substances and Radiation Devices Regulations](#) and either repaired or sent for disposal. Any radiation exposure to a person as a result of these events was well below the annual public regulatory dose limit of 1 mSv. All events in this category are closed.

5.7.2 Spill or contamination

All licensees are required to document, record and investigate every skin contamination event to ensure work practices are optimized and to minimize the probability of repeat occurrences. None of the spill, contamination or release events reported in 2016 posed a risk to the environment or resulted in members of the public receiving a dose.

There were 20 events related to spills or minor contamination of personnel reported:

- Eight incidents involved spills of technetium-99m. Three of these resulted in skin contamination of workers. In one case, the worker was able to wash off the contamination. In the remaining two cases, the workers were unable to completely remove the contamination by washing their hands, resulting in a small extremity dose well below the regulatory limits.
- One incident involved a spill of indium-111 without contamination to a person.
- There were four spills involving fluorine-18. Three resulted in contamination of the skin of the workers involved. In all three cases, the contamination was quickly removed and did not result in the workers receiving doses above regulatory limits.

- One incident involved a spill of strontium-82 without contamination to a person.
- Four spills involved iodine-131 without contamination to a person.
- Two spills involved yttrium-90. One of the incidents resulted in contamination of a worker and a dose to the skin of his hands above the regulatory limit of 500 mSv. This event was presented to the Commission on [December 14, 2016](#).

5.7.3 Missing, stolen or found nuclear substances

Licensees are required to have in place physical security measures, practices and programs to prevent the loss, illegal use, illegal possession or illegal removal of nuclear substances during their entire lifecycle, including while they are in storage or during transport.

In 2016, there were 10 reported events involving lost or stolen nuclear substances.

- Nine events involved Category 3, 4 and 5 sources; considered to be of moderate, low and very low risk respectively. The sealed sources or radiation devices were recovered in four of these cases.
- One event involved a Category 2 source (high risk). A licensee lost an exposure device while transporting it to a job site. The licensee recovered the device the following day. Details of this event were reported to the Commission on [August 18, 2016](#).

In 2016, one portable gauge stolen in 2015 was recovered.

In 2016, there were two events in which nuclear substances were found in the public domain. One was a low-risk device (i.e., a dew point analyzer) containing radium-226, which is a Category 5 sealed source. The second item was an unidentified piece of metal with radiation markings and radiation levels above background. Both devices were found at scrap metal facilities. Inspectors from the CNSC took possession of the devices and will make arrangements for their disposal.

Events involving lost stolen or recovered radiation devices and sealed sources are reported in the [Lost or Stolen Sealed Sources and Radiation Devices Report](#), which is updated regularly. Table 4 provides a summary of the events involving missing and found nuclear substances that occurred in 2016.

Table 4: Summary of events involving missing or found nuclear substances and radiation devices in 2016

#	Date	Event summary	Sealed source category	INES rating level	Status
2677	January 8	A licensee reported sealed sources as lost when he was unable to account for the exact location of the sources.	5	0	Not recovered (very low risk)

#	Date	Event summary	Sealed source category	INES rating level	Status
2760	May 23	A vehicle containing a portable gauge was reported stolen. The vehicle and the portable gauge were recovered.	4	0	Recovered
2769	June 15	A therapeutic dose of iodine-131 was reported as missing following delivery.	n/a	0	Not recovered (decayed)
2775	June 28	A dew pointer was found in a load of scrap metal.	5	0	Found source
2793	August 3	A licensee reported the loss of an exposure device while transporting it to a job site. The exposure device was recovered the following day.	2	0	Recovered
2823	September 9	A portable gauge was stolen from a construction site. The police were notified and the portable gauge was recovered.	4	0	Recovered
2866	October 4	A car transporting a portable gauge was reported as missing. It was determined that the car had been towed to a city impound lot. The device and car were recovered.	4	0	Recovered
2867	October 4	A portable gauge was stolen from a car parked at a private residence. The device has not been recovered.	4	1	Not recovered (low risk)
2869	October 4	A piece of metal with a radiation warning sign was discovered at a scrap metal facility.	5	0	Found source
2883	October 21	A nickel-63 sealed source was discovered missing from a gas chromatograph. The source was recovered.	5	0	Recovered
2627	November 10	A portable gauge stolen on November 7, 2015 was recovered.	4	0	Recovered
2921	December 2	A portable gauge was stolen from a truck parked outside a private residence. The device has not been recovered.	4	1	Not recovered (low risk)

#	Date	Event summary	Sealed source category	INES rating level	Status
2925	December 21	A Category 5 source (i.e., a cancer seed) was reported as lost.	5	0	Not recovered (very low risk)

5.7.4 Breach of security

The extent of the security measures required by a licensee depends upon the types of nuclear substances used and activities conducted. In 2016, there were five events reported to the CNSC relating to breaches of security.

- One involved the discovery of an unlocked room with the intrusion alarm unarmed during a security sweep of a secure nuclear medicine area. The licensee's investigation determined that no nuclear substances were missing. The licensee determined that a new member of the housekeeping staff was given access to the room by the radiotherapy manager who failed to inform the staff member of the requirement to arm the alarm system or lock the door once cleaning of the room was complete. The licensee addressed the training and communication issues that led to this event. These measures were reviewed by CNSC staff and found to be satisfactory.
- One involved the theft of keys for a room that contained prescribed equipment. The licensee added extra security surveillance to the area until the locks were rekeyed. There was no unauthorized access to the prescribed equipment or prescribed information.
- One involved an unauthorized person working in a laboratory area dedicated for work with nuclear substances at a university. The licensee's investigation determined that the individual was not working with nuclear substances. The licensee revised its procedure for visitors in laboratories. The measures were reviewed by CNSC staff and found to be satisfactory.
- One involved a break-in at licensee's location used for the storage of portable nuclear gauges. This was the second time that this location was targeted by thieves. The locker containing the portable gauges had not been tampered with and no devices or prescribed information were stolen. As a result, the licensee put in place heightened security measures at this location. A third break-in occurred in early 2017. In response, CNSC staff met with the local police to discuss the situation, and conducted reactive security inspections at this location as well as at other locations operated by this licensee to verify that security measures in place were adequate.
- One involved an access card to a restricted area that was found in a public washroom at a licensee's facility. Security staff immediately deactivated the card, and then verified and confirmed that the card had not been used. The licensee modified its procedures to reduce the likelihood of a similar event in the future.

There was no access to, or theft of, nuclear substances or radiation devices as a result of any of these events. All of the events are closed.

5.7.5 Packaging and transport

Approximately one million packages containing nuclear substances are safely transported each year in Canada. In 2016, there were 44 events reported to the CNSC relating to packaging and transport.

- Sixteen were accidents involving vehicles transporting nuclear substances or radiation devices that did not result in any damage to the packages on board.
- Eleven involved packages that were misrouted or delayed during transport. In all cases, the packages were delivered to the proper location or returned to the originator.
- Ten incidents involved packages that were damaged during transport. In all cases, the reports concluded that the nuclear substances or radiation devices were fully contained within the packages and that there was no release as a result of the incidents.
- Two involved packages with external contamination following transportation. In both cases, the licensees isolated the package to prevent further contamination of workspaces and left the packages to decay. The contamination levels were low and posed no risk to the workers who received the packages.
- One involved a package that was not labelled in accordance with the [Packaging and Transport of Nuclear Substances Regulations, 2015](#). The package contained nuclear substances, but was not labelled accordingly.
- One involved improper packaging of a source. The source was not inserted into the shielded position, which led to a dose rate on the surface of the package that was higher than expected, but still within regulatory limits.
- One involved a package left behind in a public area. The package was retrieved by licensee staff. No members of the public were affected by the event.
- One involved a package that was not classified in accordance with the [Packaging and Transport of Nuclear Substances Regulations, 2015](#). The package was classified as an excepted package for transport instead of being classified as a Type A package. The packaging used for transportation met all the requirements applicable to Type A packages.
- One involved a vial of fluorine-18 that was broken upon opening of the package. The interior of the package was contaminated, however there was no contamination on the exterior of the package.

None of the events resulted in releases to the environment or doses to members of the public above regulatory limits.

5.7.6 Unplanned exposures to persons

When nuclear substances are used, there may be situations that lead to unplanned exposures to persons. Often these events involve people entering restricted work areas, such as required in the industrial radiography subsector.

In 2016, there were 13 events reported to the CNSC that led to unplanned exposures to persons. Twelve of these were reported by licensees and one was

reported through the CNSC public complaints process. The event reported through the CNSC public complaints process is the only event that led to a dose above a regulatory dose limit. All events are closed.

- Six events involved breaches of safety barriers where workers not involved in the operation of radiation devices or Class II prescribed equipment entered restricted areas that were established prior to the use of exposure devices or linear accelerators. In all cases the workers received doses below the public regulatory dose limit of 1 mSv.
- Three events involved contract workers who entered vessels when the shutter of the fixed gauges installed inside the vessels were left in the open position. In two events, the workers were employees of the licensee but were non-NEWs. The third event involved a contract worker who was also a non-NEW. In all cases, the individuals received doses below the public dose limit of 1 mSv. In all three cases, the licensee used procedures that were not compliant with a condition of the licence pertaining to vessel entries. Administrative monetary penalties were issued to two of the three licensees as a result of the potential overexposures.
- Two events involved NEWs who were pricked with needles during nuclear medicine procedures. One NEW was exposed to iodine-131 and the other to fluorine-18.
- One involved a NEW who was contaminated with technetium-99m during the preparation of nuclear medicine doses. The estimated dose received was below regulatory limits.

The final occurrence of an unplanned exposure was brought to the attention of the CNSC staff through the CNSC's public complaints program. It was not reported by a licensee.

- A member of the public received a dose in excess of the annual effective dose limit of 1 mSv/year. The member of the public accepted, along with four other members of the public, a ride advertised on a travel-share website from a driver offering to drive passengers at the same time he was delivering packages containing nuclear substances. This practice is not authorized under the *Packaging and Transport of Nuclear Substances Regulations, 2015*. Based on initial information, the CNSC made a conservative estimate that the passenger most affected as result of a 10-hour trip would have received an effective dose of approximately 1.62 mSv. CNSC staff informed the affected person of the effective dose received and the consequences of the radiation dose they received. The carrier terminated the driver and modified its internal procedures to include internal unannounced audits at drop-off locations. The CNSC issued an administrative monetary penalty to the driver of the vehicle as a result of this event in 2017. This event was reported to the Commission on [December 14, 2016](#).

5.7.7 International events in 2016

The CNSC monitors events reported to the International Atomic Energy Agency (IAEA) through the IAEA's International Reporting System for Operating

Experience, a database of events that occur around the world. Regulators report events that occur in their countries on a voluntary basis for the purpose of sharing information. Reported events are assigned a significance according to the INES scale. In 2016, eight level 2 events involving nuclear substances and radiation devices were reported to the IAEA, which are summarized in the [spring 2017 edition of the DNSR Newsletter](#).

These events include:

- An exposure device operator received a dose to his finger above the regulatory limit while repairing a guide tube and the source did not return to the shielded position.
- Workers were conducting industrial radiography work in an area with a known high radiation field. The workers ignored their personal dosimeter alarms and continued working, with a potential for very high doses to the workers.
- An industrial radiography worker working too close to the source received an effective whole body dose of 55 mSv.
- A 1.3 terabecquerel (TBq) selenium-75 source was damaged during the repair of industrial radiography equipment. Contamination was spread outside the controlled area and members of the public received doses slightly above the regulatory limit.
- Twenty members of the public received doses above regulatory limits when a 16-year old boy found a sealed source used for industrial radiography and took the source home.
- A sealed source used for industrial radiography was transported in what was marked as an empty package and transported with general luggage on a passenger flight.
- A nuclear pharmacist received a dose to his hand of 511 mSv in a year, which was above the regulatory limit. An investigation determined the individual was not following procedures for working with radiation sources at a distance.
- A cyclotron was operated while the bunker door was open. Workers were present at the bunker location for about four minutes before they became aware of the situation.

5.7.8 Response to forest fires in Fort McMurray

In the spring of 2016, a forest fire forced the evacuation of Fort McMurray, Alberta. At the time of the fire, there were more than 40 CNSC-licensed locations in and around Fort McMurray. CNSC staff contacted affected licensees to verify the status of storage locations, and provided a list of the locations where nuclear substances and radiation devices were stored with the Alberta Disaster Response Team. At the request of the Alberta Emergency Management Agency's Provincial Operations Centre, two CNSC staff were dispatched to assess the potential risk to the public and the environment as a result of the forest fire. Based on the storage locations and validation by field verifications, CNSC staff concluded that all of the locations were unaffected by the forest fires. A detailed presentation on the CNSC response to the fire in Fort McMurray was provided at the Commission meeting held on [June 22, 2016](#).

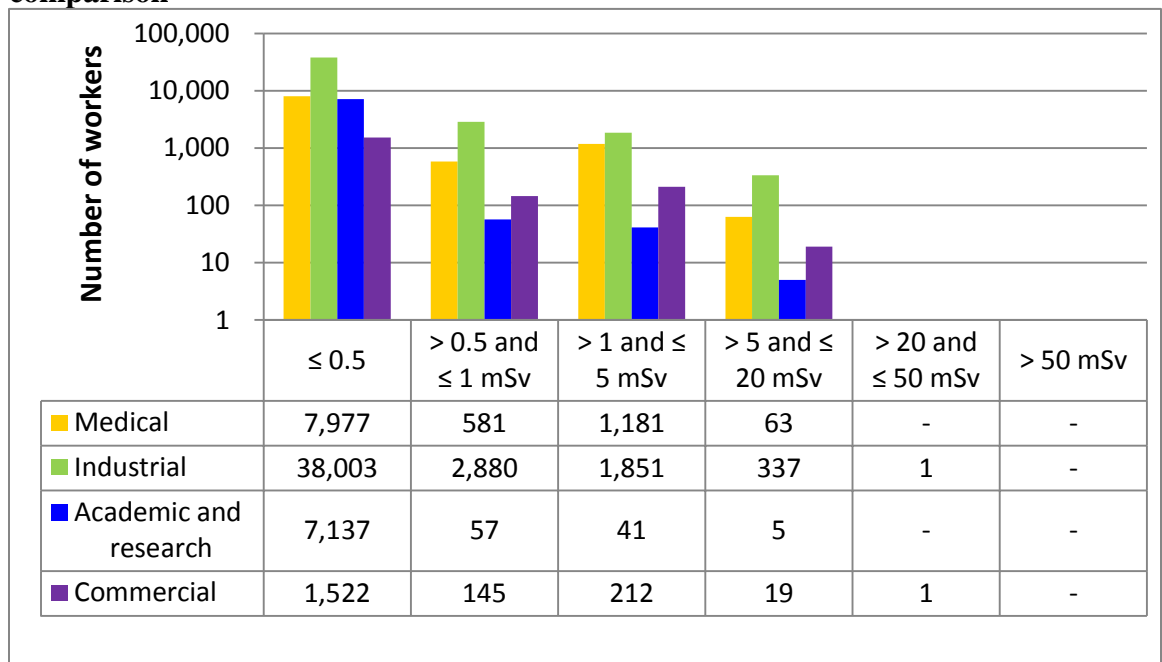
5.8 Effective doses to workers

A total of 62,013 workers in the four nuclear sectors covered in this report were monitored for occupational doses in 2016, of which 22,606 were designated as NEWs.

One NEW from the medical sector exceeded the annual regulatory extremity dose limit of 500 mSv for the hands. More details on this event can be found in [section 5.7.2](#)

Figure 15 shows the dose distribution for all workers in 2016. All workers that received doses above 1 mSv in 2016 were NEWs.

Figure 15: Annual effective doses to all workers in 2016, sector-by-sector comparison



The differences in doses to workers among sectors reflect the nature of the various activities within those sectors figure 16 shows the doses received by the 22,606 NEWs monitored in 2016 while figure 17 shows the doses of NEWs from 2012 to 2016.

Figure 16: Annual effective doses to NEWs in 2016, sector-by-sector comparison

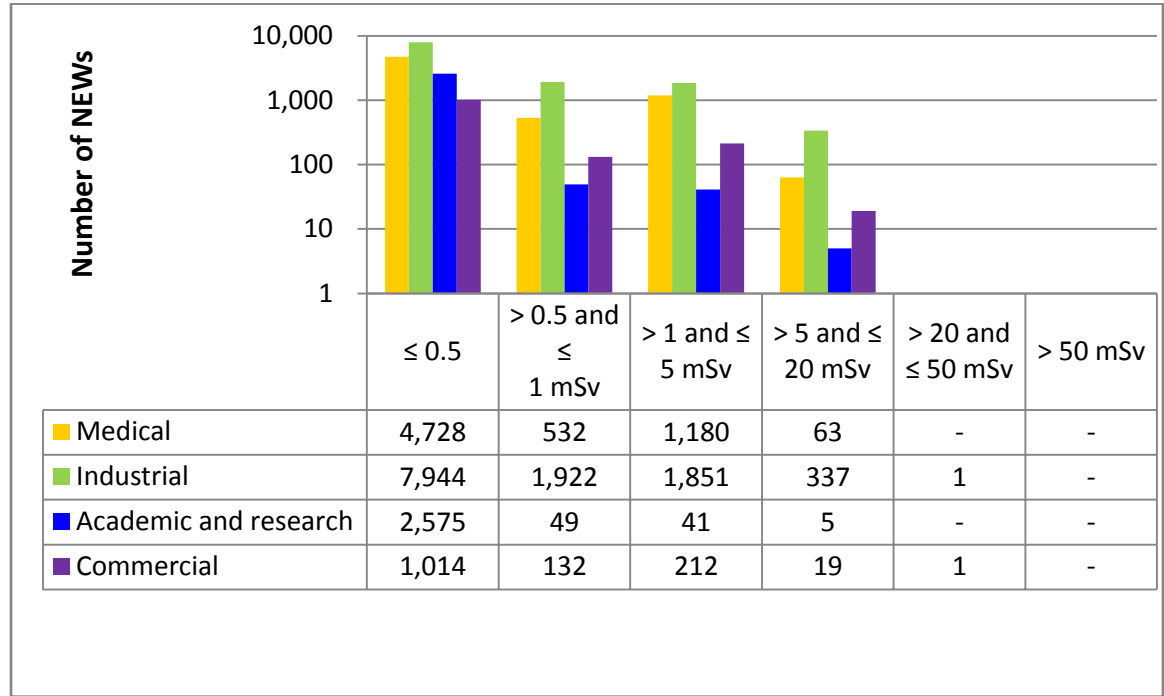
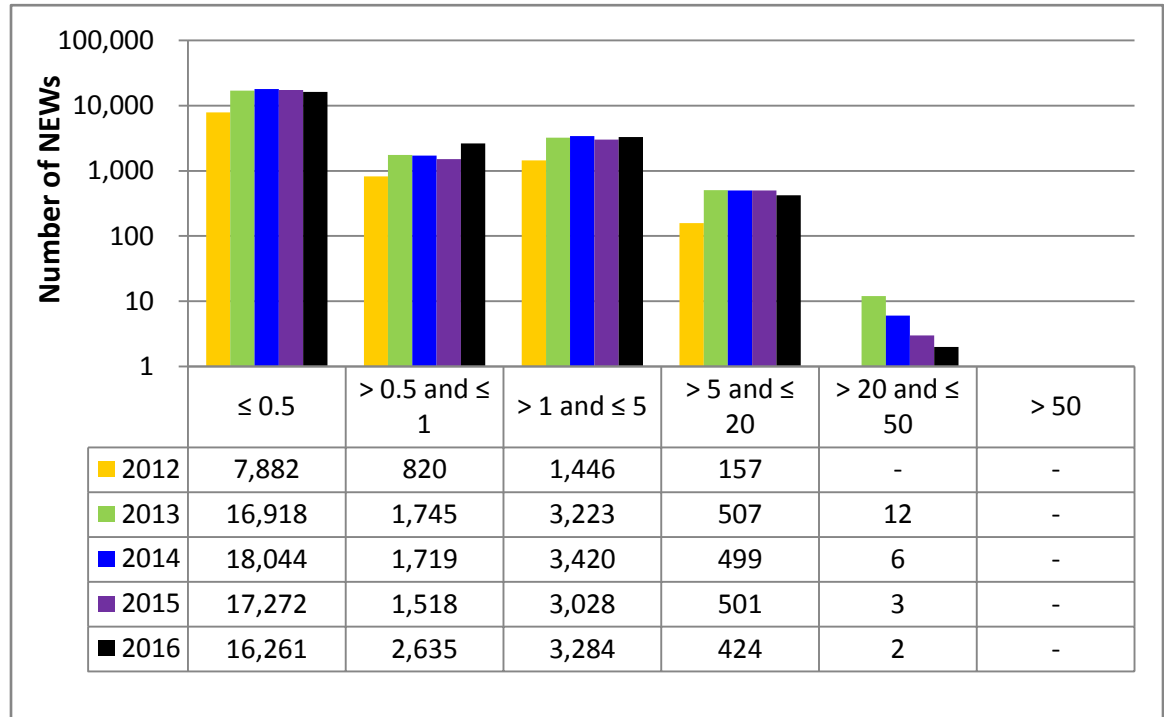


Figure 17: Annual effective doses to NEWs from 2012 to 2016, all sectors combined



Note: For 2012, the doses provided were based on only a representative sample of annual compliance reports within each sector.

6 MEDICAL SECTOR

Licenses in the medical sector use nuclear substances and operate accelerators and other Class II prescribed equipment for diagnostic and therapeutic purposes in hospitals and medical clinics. In 2016, the medical sector accounted for 470 CNSC licences and 9,802 total workers, of which 6,503 were designated as nuclear energy workers (NEWs).

The results of CNSC staff evaluation of the regulatory performance of all medical sector licensees inspected in 2016 are included in the overall results. The following three subsectors are highlighted in further detail:

- nuclear medicine
- radiation therapy
- veterinary nuclear medicine

Figure 18: Veterinary nuclear medicine clinic (Source: CNSC)



6.1 Sector overview

Medical applications using radiopharmaceuticals target specific tissues and organs, and allow 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 and fluorine-18 are administered to patients for imaging purposes. Examples of common diagnostic nuclear medicine procedures include myocardial perfusion 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 nuclear medicine 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.

Medical linear accelerators and brachytherapy equipment are also used for therapeutic procedures. These devices are used to treat cancer by delivering carefully controlled doses of radiation to cancerous tissue.

Veterinary nuclear medicine uses techniques similar to 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.

Figure 19: Gammaknife used for cancer treatment (Source: CNSC)



6.2 Summary of safety assessment

Based on their evaluation and verification of licensee performance, CNSC staff concluded that the safety performance of the medical sector was satisfactory in 2016.

Doses received by NEWs in this sector remained low, with the majority of workers receiving effective doses below 1 millisievert (mSv). One NEW received a dose to the hands above the annual limit.

Of the inspected licensees in 2016, the majority were found to be compliant in the four safety and control areas (SCAs) covered in this report:

- 95.8 percent were compliant in management system
- 88.2 percent were compliant in operating performance
- 80.2 percent were compliant in radiation protection
- 85.6 percent were compliant in security

In cases where non-compliances were noted, licensees took appropriate corrective actions, satisfactory to CNSC staff, to address the non-compliances.

The CNSC issued one administrative monetary penalty (AMP) in the medical sector in 2016 for non-compliances related to inventory control of sealed sources.

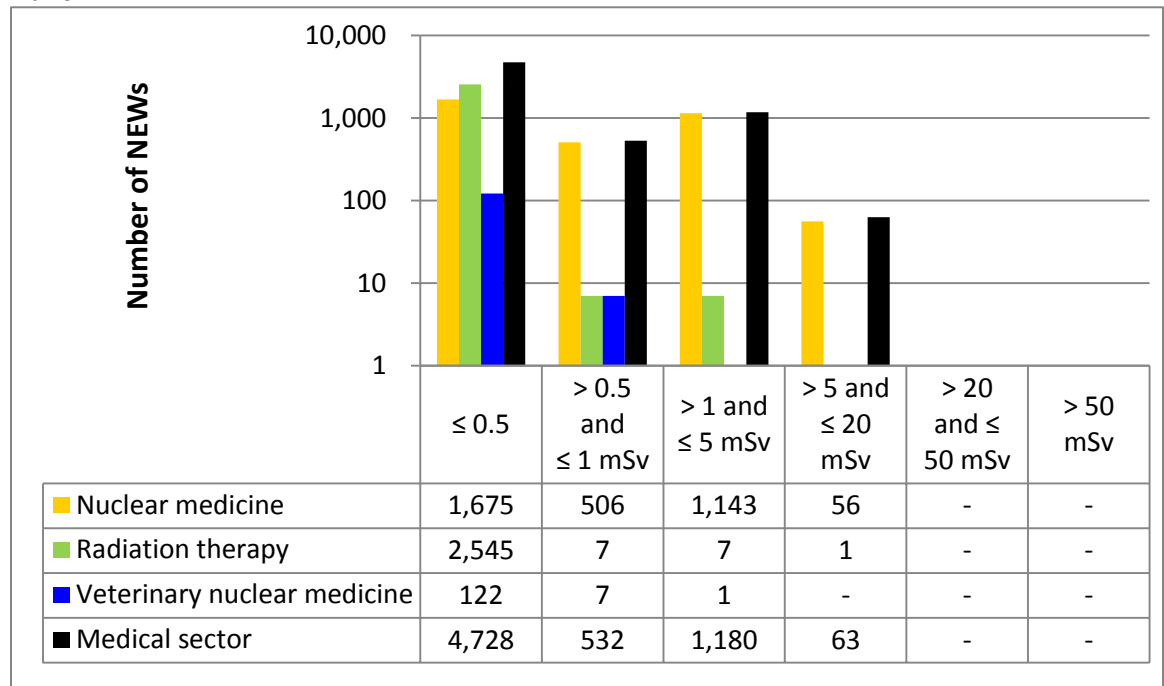
6.3 Safety performance measures

6.3.1 Doses to workers

NEWs in the nuclear medicine subsector continued to receive higher doses than workers in other medical subsectors as a result of directly administering nuclear substances to patients and constantly working in environments where patients are in close proximity to health professionals. The vast majority of these NEWs received doses below 5 mSv, as shown in figure 20. The doses to NEWs in the nuclear medicine subsector over the period of 2012 to 2016 are shown in figure 21.

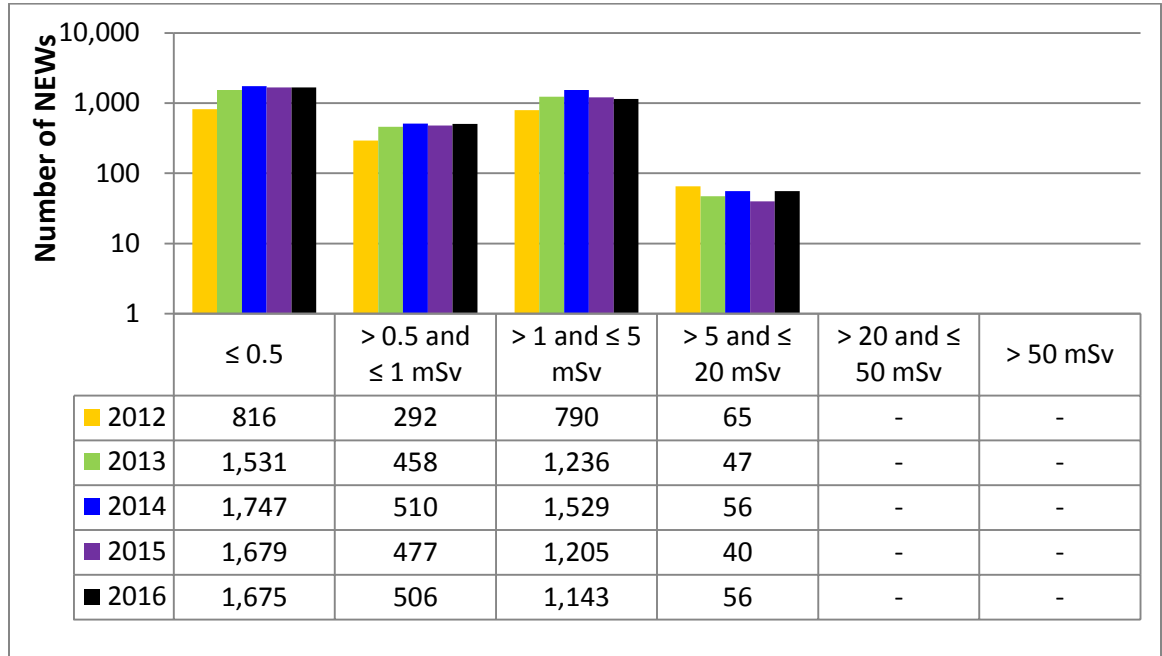
In 2016, one NEW in the medical sector received a dose to the skin of the hands above the regulatory limit of 500 mSv. Details of this event are presented in [section 5.7.2](#).

Figure 20: Medical sector performance – annual effective doses to NEWs in 2016



Note: The total number of NEWs shown in the medical sector row is the aggregate for the entire sector, including subsectors not highlighted in this report.

Figure 21: Nuclear medicine subsector performance, annual effective doses to NEWs, 2012–16



Note: For 2012, the doses provided were based on only a representative sample of annual compliance reports within each sector.

6.3.2 Management system

The overall compliance rating for management systems in the medical sector was 95.8 percent (207 of 216 inspections) in 2016. As shown in figure 22, the majority of licensees inspected by the CNSC were found to be compliant. A sector-to-subsector comparison of inspection ratings is provided in figure 23. The radiation therapy licensees showed low compliance ratings in this SCA. This phenomenon is amplified by the small number of licensees. The main non-compliances exhibited by radiation therapy licensees in this SCA were administrative in nature, and related to maintaining records and reviewing policies and procedures within the required timelines. The primary non-compliances for other medical licensees for this SCA were: using nuclear substances not included on their licences, failing to notify the CNSC of changes to the hospital names, and failing to notify the CNSC of changes to radiation safety officer and applicant authorities.

Figure 22: Medical sector performance – details of management system inspection ratings, 2015–16

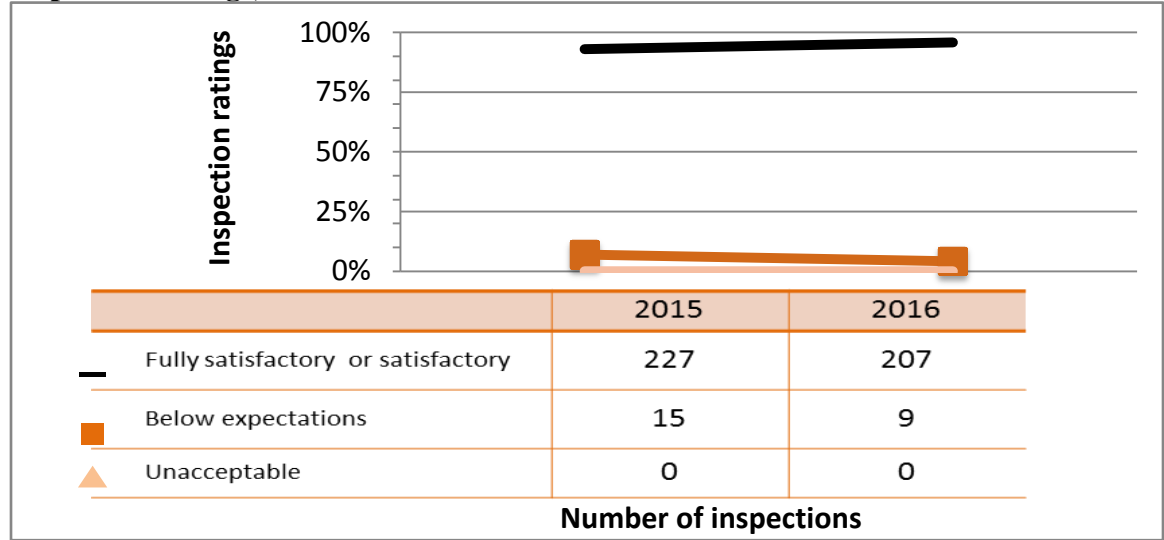
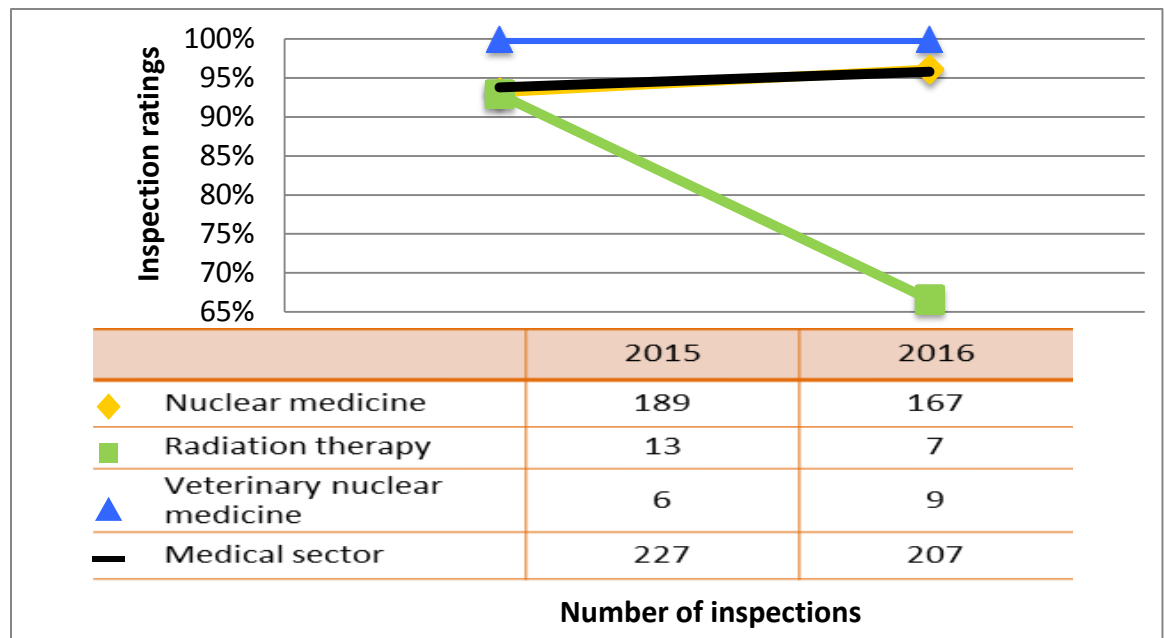


Figure 23: Medical sector performance comparison with highlighted subsectors – inspection ratings that met or exceeded expectations of management system, 2015–16



Note: The number of inspections shown in the medical sector row is the aggregate for the entire sector, including subsectors not highlighted in this report.

6.3.3 Operating performance

The overall compliance rating for operating performance in the medical sector was 88.2 percent (201 of 228 inspections) in 2016. As shown in figure 24, the majority of licensees inspected by the CNSC were found to be compliant. A sector-to-subsector comparison of inspection ratings is provided in figure 25

The most common non-compliances in the operating performance SCA were workers not following procedures, or not using the equipment provided to them by the licensees, and licensees not following the procedures written in their radiation safety manuals.

Figure 24: Medical sector performance – details of operating performance inspection ratings, 2012–16

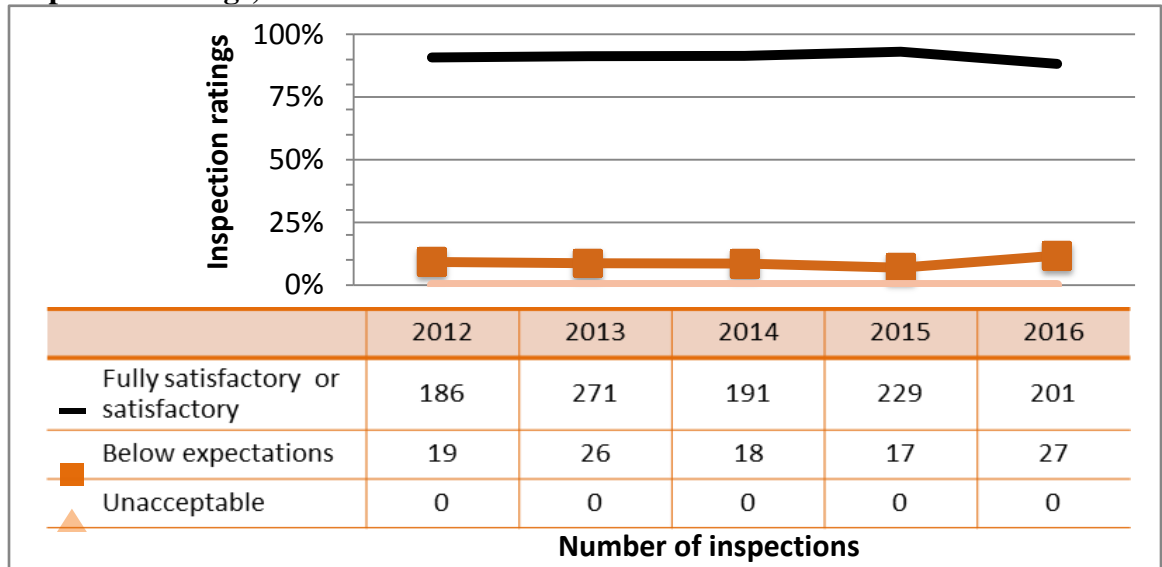
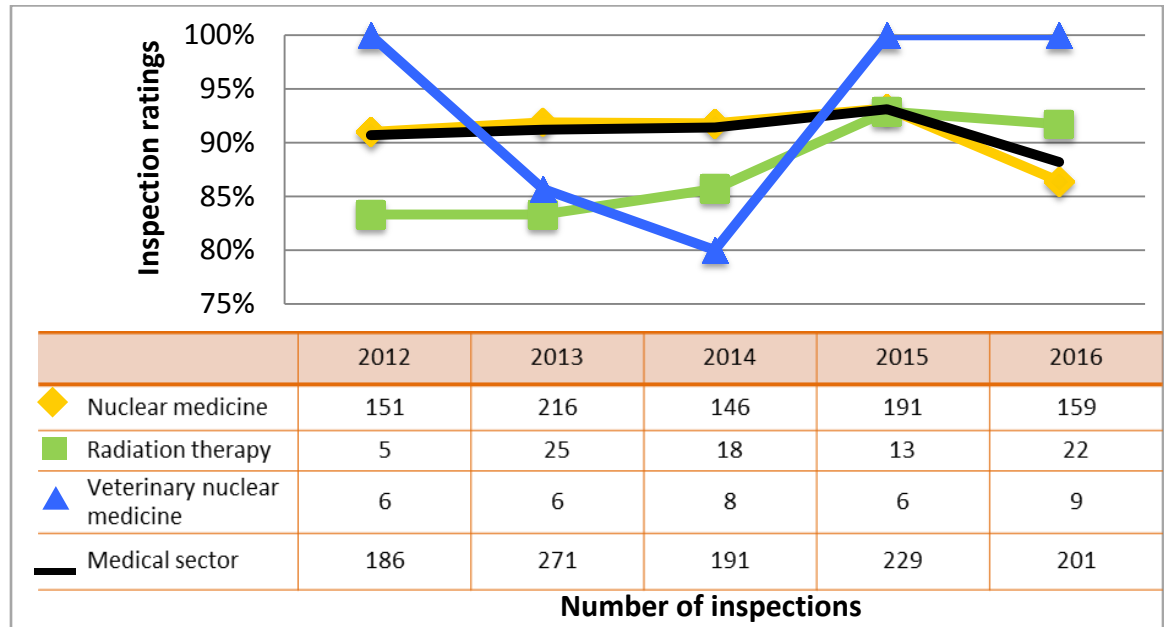


Figure 25: Medical sector performance comparison with highlighted subsectors – inspection ratings that met or exceeded expectations of operating performance, 2012–16



Note: The number of inspections shown in the medical sector row is the aggregate for the entire sector, including subsectors not highlighted in this report.

6.3.4 Radiation protection

The overall compliance rating for radiation protection in the medical sector was 80.1 percent (185 of 232 inspections) in 2016, as shown in figure 26. A sector-to-subsector comparison of inspection ratings is provided in figure 27. Compliance to requirements in the radiation protection SCA has been decreasing since 2014. The trend is driven primarily by lower compliance in the nuclear medicine subsector. The most common non-compliance for this SCA amongst medical sector licensees was not performing thyroid monitoring as required.

Figure 26: Medical sector performance – inspection ratings of radiation protection, 2012–16

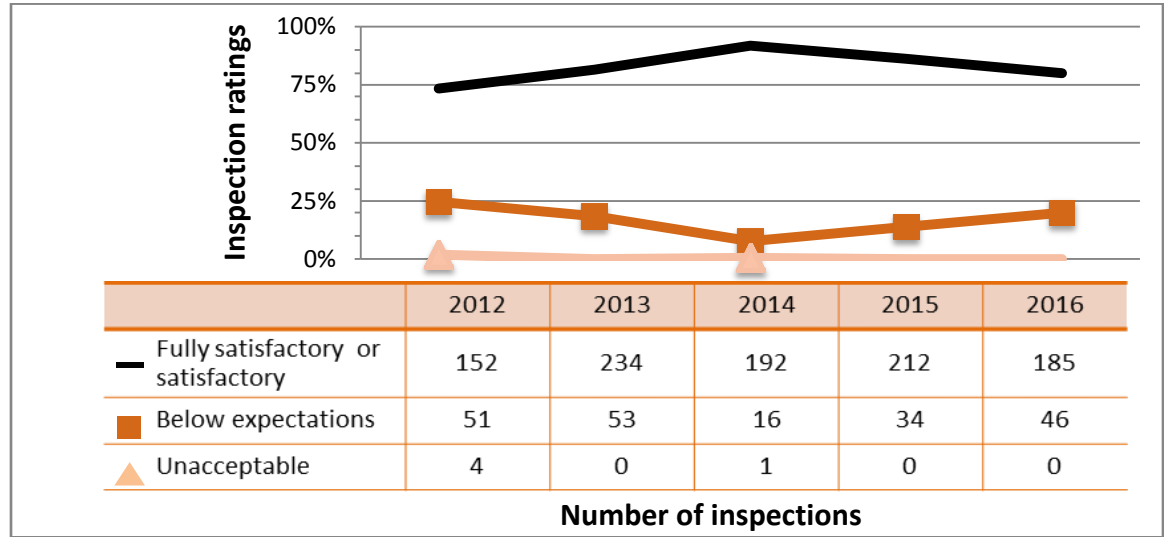
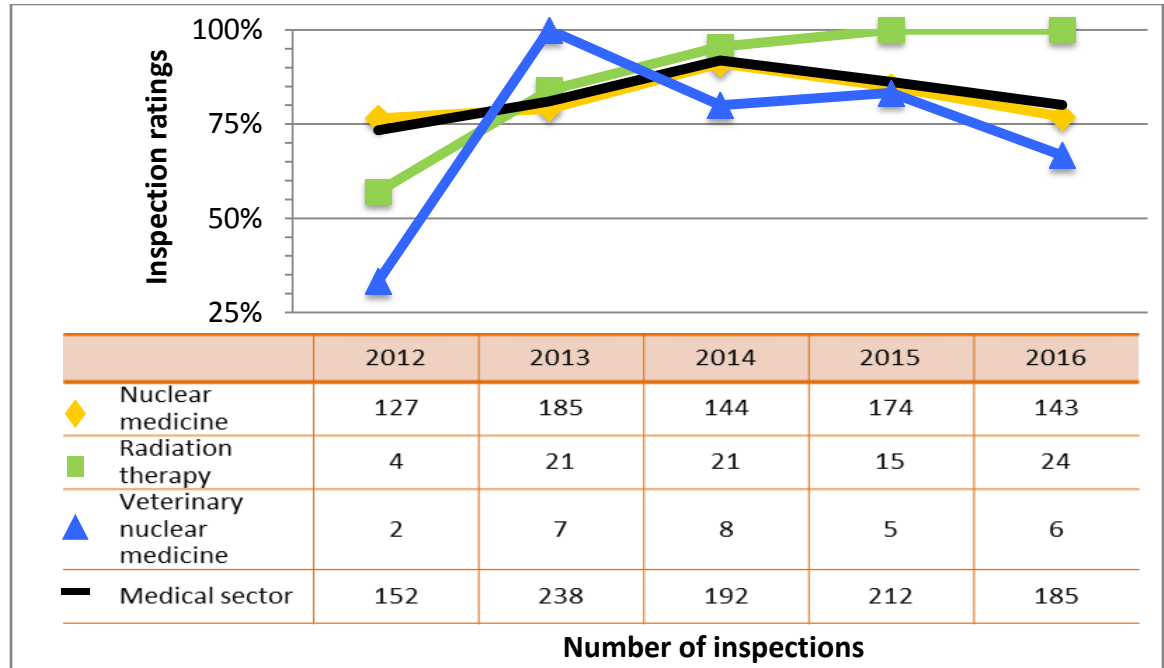


Figure 27: Medical sector performance comparison with highlighted subsectors – inspection ratings meeting or exceeding expectations of radiation protection, 2012–16

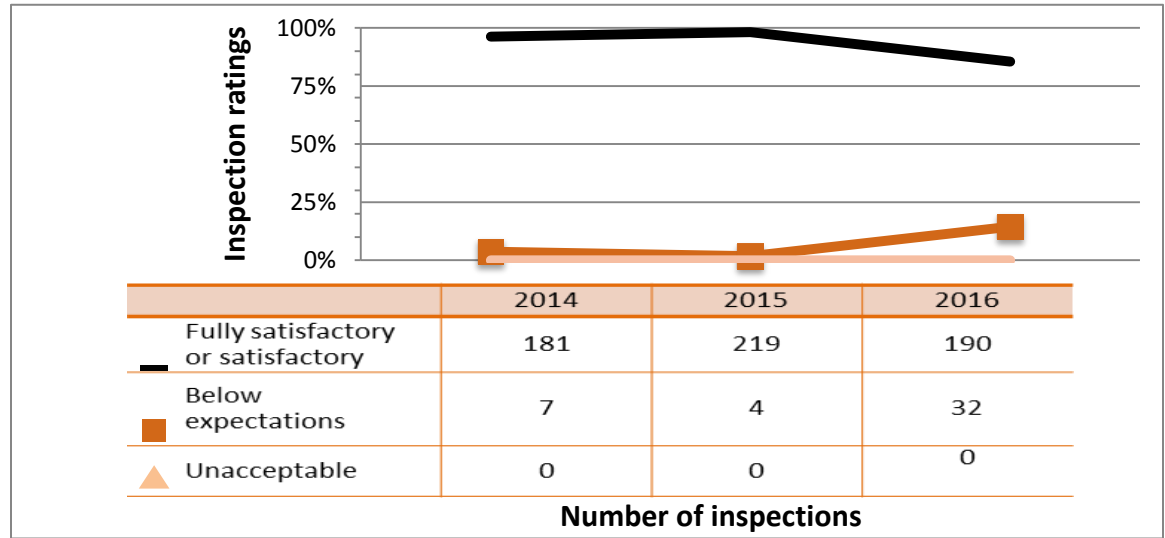


Note: The number of inspections shown in the medical sector row is the aggregate for the entire sector, including subsectors not highlighted in this report.

6.3.5 Security

The compliance rating for the security SCA for licensees in the medical sector was 85.6 percent (190 of 222 inspections) in 2016, as shown in figure 28. All non-compliances were corrected within a short timeframe of being cited.

Figure 28: Medical sector performance – inspection ratings for security 2014–16



7 INDUSTRIAL SECTOR

Licensees in the industrial sector use nuclear substances either in industrial facilities or as part of fieldwork or construction. In 2016, this sector accounted for 1,308 CNSC licences and 43,072 total workers. Of these workers, 12,055 were designated as nuclear energy workers (NEWs).

The results of CNSC staff evaluation of the regulatory performance of all industrial sector licensees inspected in 2016 are included in the overall results. The following four subsectors are highlighted in further detail:

- portable gauge
- fixed gauge
- industrial radiography
- oil well logging

7.1 Sector overview

Typical applications of nuclear substances in the industrial sector include the measurement of physical parameters such as density, moisture content and geological composition in civil engineering. They are also used for level and flow rate in industrial facilities (such as those that support oil and gas exploration, mining and manufacturing). These nuclear substances 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 traditionally used in exposure devices for the non-destructive examination of materials. Persons operating these devices, or supervising trainees in the operation of such devices, must be certified by the CNSC. Exposure devices that are used for industrial radiography, as shown in figure 29, 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 users 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. More recently, a small number of licensees are turning to linear accelerators for radiography imaging. This equipment facilitates analysis of thicker materials than is possible using more traditional methods. Moreover, high-energy CT machines are being used to create three-dimensional images of the interior of materials such as logs and engineered wood products.

Cesium-137, another gamma emitter, is most commonly used in portable and fixed gauges to measure density. In other industrial uses, such as measuring moisture content, portable gauges most commonly use neutron-emitting nuclear substances such as americium-241/beryllium.

Figure 29: An exposure device being used for material testing (Source: CNSC)



7.2 Summary of safety assessment

Based on their evaluation and verification of licensee performance, CNSC staff concluded that the safety performance of the industrial sector was satisfactory in 2016.

Doses received by NEWs in this sector remained low, with the majority of workers receiving doses below 1 millisievert (mSv). No NEW received a dose in excess of the annual regulatory limits.

Of all the inspected licensees in 2016, the majority of them were found to be compliant in the four SCAs covered in this report:

- 98.4 percent were compliant in management system
- 86.4 percent were compliant in operating performance
- 84.4 percent were compliant in radiation protection
- 95.1 percent were compliant in security

In cases where non-compliances were noted, licensees took appropriate corrective actions, satisfactory to CNSC staff, to address the non-compliances.

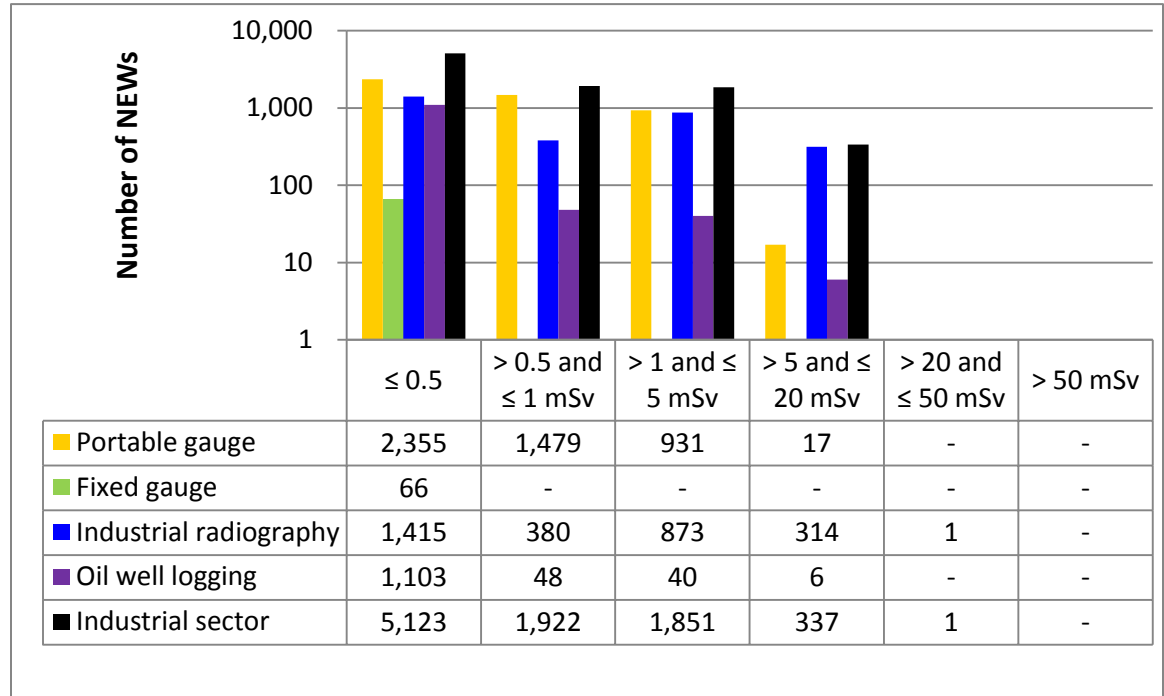
The CNSC took 18 escalated enforcement actions (12 orders and six administrative monetary penalties) against licensees in the industrial sector in 2016. Further details are provided in [section 7.3.6](#).

7.3 Safety performance measures

7.3.1 Doses to workers

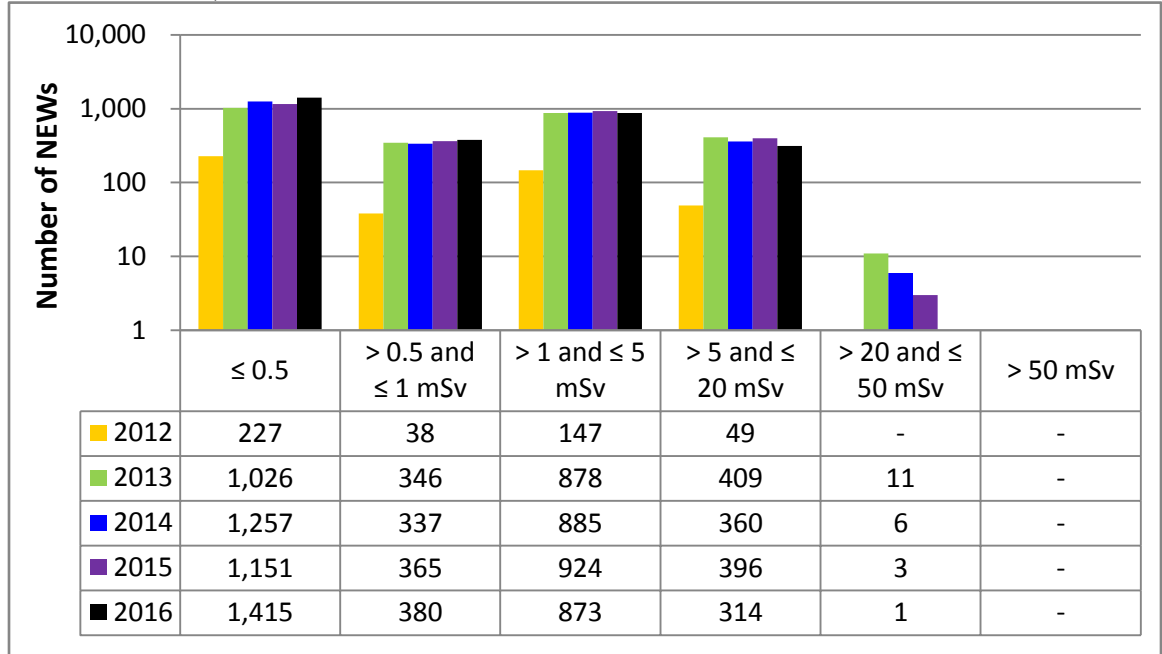
NEWs in the industrial radiography subsector continued to receive higher doses than workers in other industrial subsectors, as shown in figure 30. This is a result of working in close proximity to exposure devices containing high activity sealed sources. Figure 31 shows the doses to NEWs in the industrial radiography subsector over the period of 2012 to 2016. Doses to workers on the higher end of the spectrum (i.e., between 20 and 50 mSv) continue to decrease.

Figure 30: Industrial sector performance – annual effective doses of NEWs in 2016



Note: The total number of NEWs shown in the industrial sector row is the aggregate for the entire sector, including subsectors not highlighted in this report.

Figure 31: Industrial radiography subsector performance – annual effective doses to NEWs, 2012–16

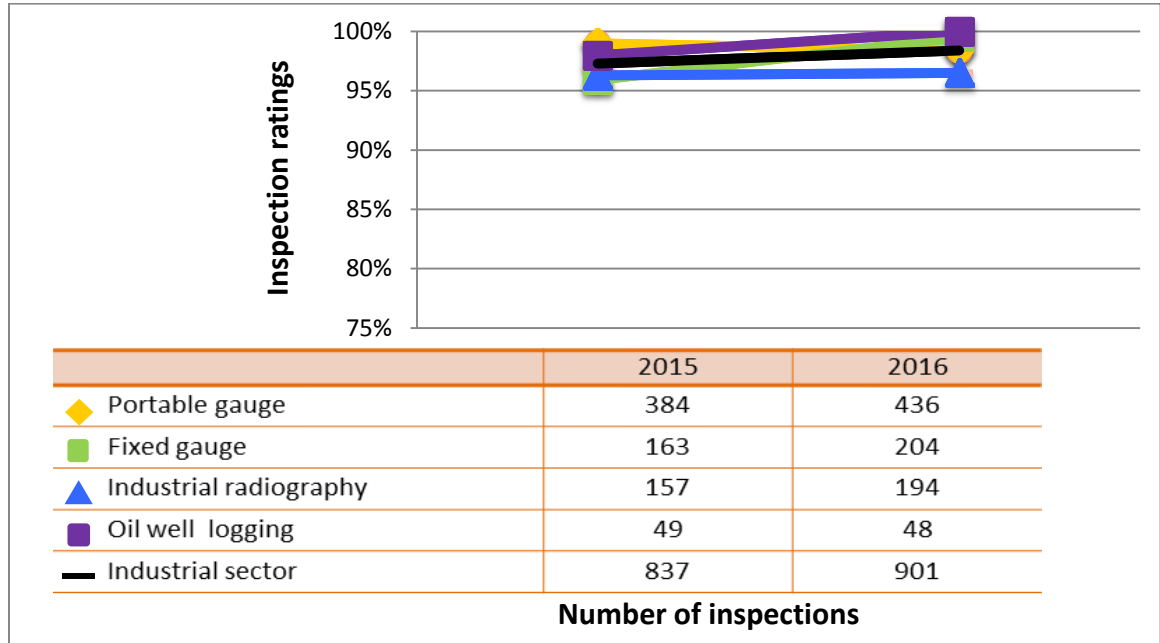


7.3.2 Management system

The compliance rating for management system in the industrial sector was 98.3 percent (901 of 917 inspections) in 2016, as shown in figure 32. Two licensees received unacceptable ratings for this SCA. Both received an order from a CNSC inspector. Details of the circumstances can be found in [section 7.3.6](#) and [appendix C](#).

Among industrial sector licensees, the main non-compliances in this SCA involved licensees not notifying the CNSC of locations where they conducted licensed activities for more than 90 days, not having the required records at temporary locations used for more than 90 days, and failing to notify the CNSC of changes to their applicant authority or radiation safety officers.

Figure 32: Industrial sector performance – inspection ratings of management system performance, 2015–16



Note: The number of inspections shown in the industrial sector row is the aggregate for the entire industrial sector, including subsectors not highlighted in this report.

7.3.3 Operating performance

The compliance rating for operating performance in the industrial sector was 86.4 percent (792 of 917 inspections) in 2016, as shown in figure 33. Five licensees received unacceptable ratings for operational performance. CNSC inspectors issued orders in all five cases. The circumstances of each are listed in [section 7.3.6](#) and in appendix C. A sector-to-subsector comparison of inspection ratings is provided in figure 34. After a year with high compliance ratings in 2015, the fixed gauge subsector’s rating in this SCA dropped back to the level observed in 2014. Conversely, both the industrial radiography and oil well logging subsectors improved their performance in this SCA compared with 2015. For the industrial radiography subsector, this is a continuation of steadily improving compliance, and for the oil well logging subsector, the improvement in 2016 is a reversal of a downward trend from 2013 to 2015.

The most common types of non-compliances were workers failing to follow the licensee’s procedures and using the safety equipment provided to them, licensees failing to follow the procedures in their radiation safety manuals, and licensees failing to keep required training records.

Figure 33: Industrial sector performance – inspection ratings of operating performance, 2012–16

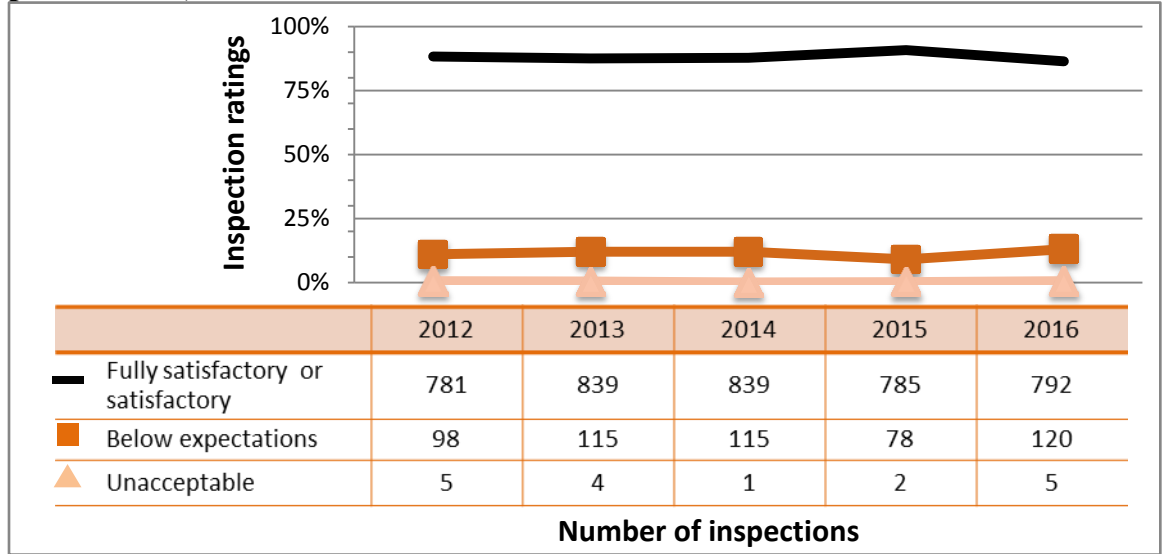
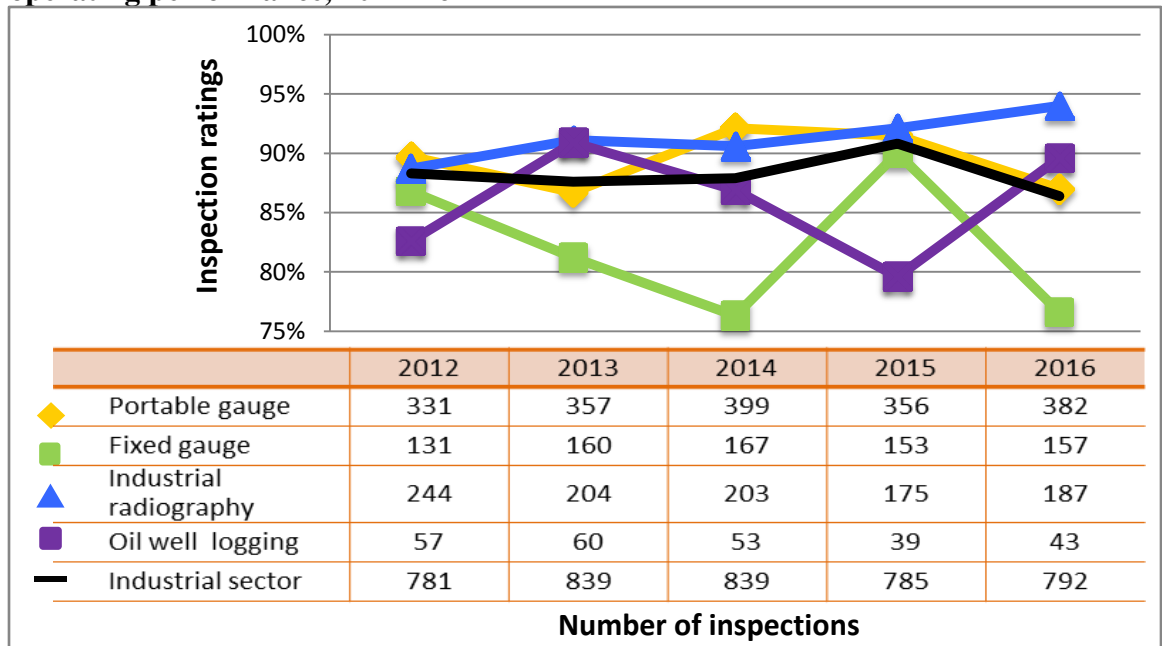


Figure 34: Industrial sector performance comparison with highlighted subsectors – inspection ratings meeting or exceeding expectations of operating performance, 2012–16



Note: The number of inspections shown in the industrial sector row is the aggregate for the entire industrial sector, including subsectors not highlighted in this report.

7.3.4 Radiation protection

The compliance rating for the radiation protection SCA for licensees in the industrial sector was 84.4 percent (773 of 916 inspections) in 2016, as shown in Figure 35. A sector-to-subsector comparison of inspection ratings is provided in

figure 36. The oil well logging and portable gauge subsectors have continued downward trends in compliance in the radiation protection SCA.

Four licensees from the industrial sector received unacceptable ratings. CNSC inspectors issued orders to each of these licensees. The circumstances of each situation can be found in [section 7.3.6](#) and [appendix C](#).

The most common non-compliances involved licensees not having available a calibrated survey meters, inadequate implementation of radiation protection programs that keep doses to workers and the public as low as reasonably achievable, and failing to post radiation warning signs.

Figure 35: Industrial sector performance – inspection ratings of radiation protection, 2012–16

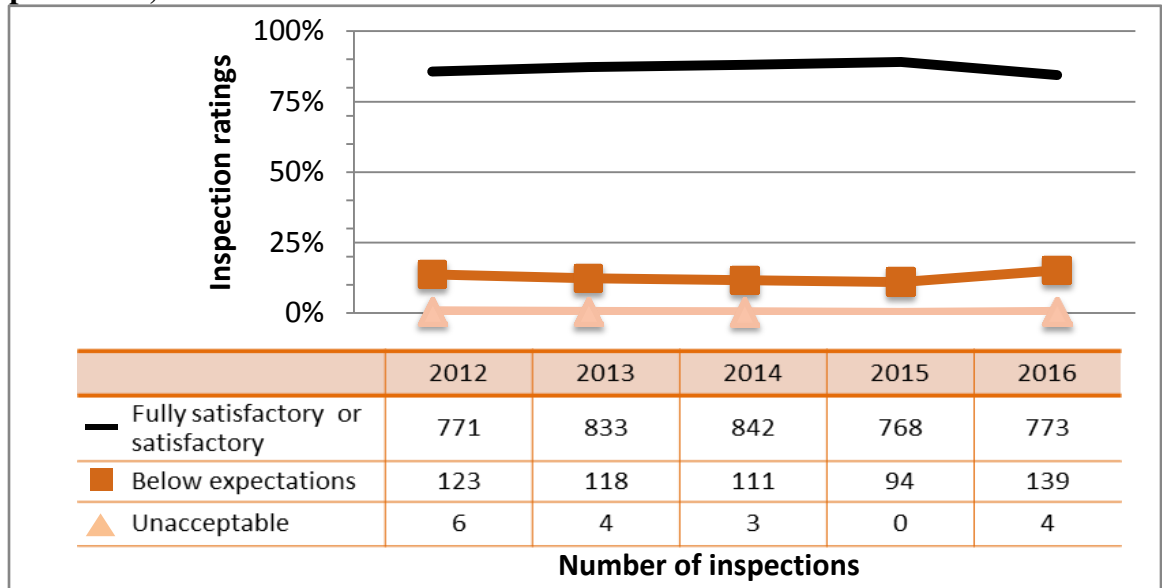
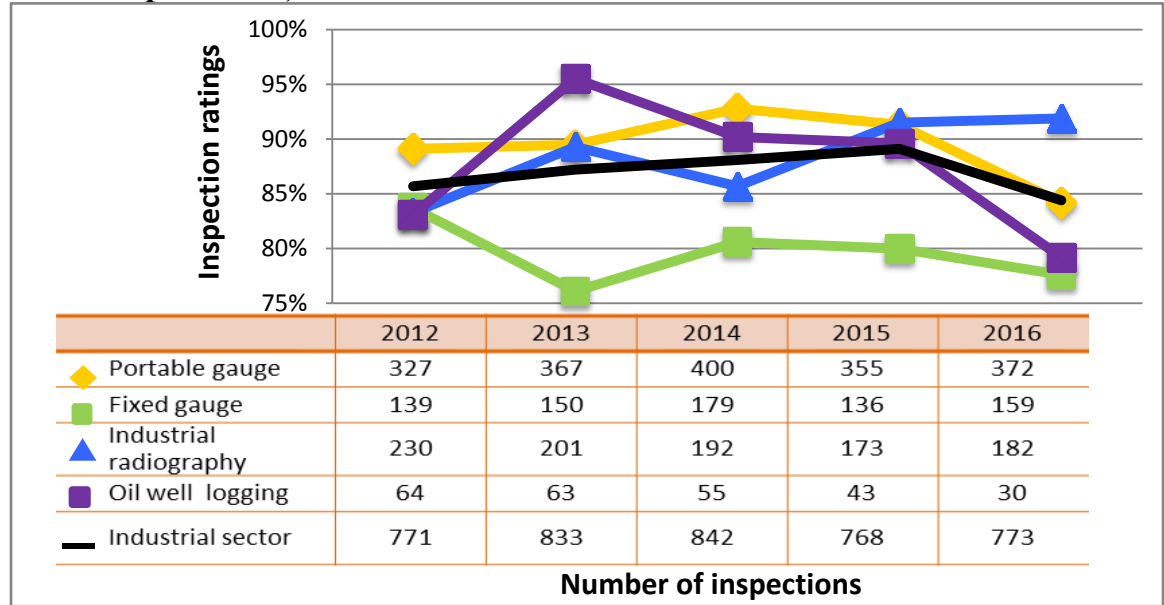


Figure 36: Industrial sector performance comparison with highlighted subsectors – inspection ratings meeting or exceeding expectations of radiation protection, 2012–16

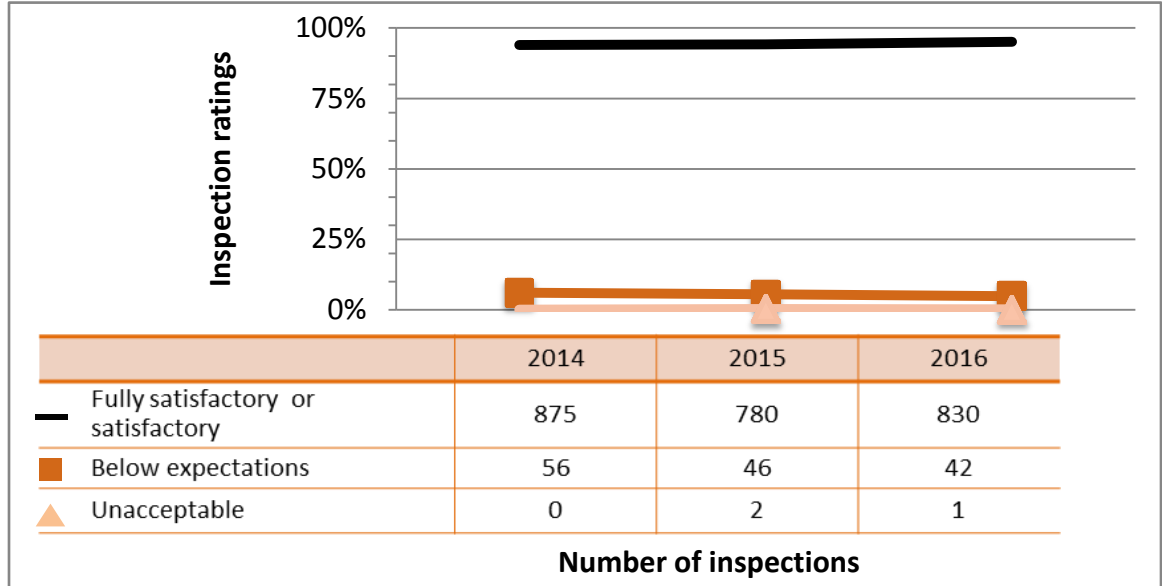


Note: The number of inspections shown in the industrial sector row is the aggregate for the entire industrial sector, including subsectors not highlighted in this report.

7.3.5 Security

The compliance rating for security SCA for licensees in the industrial sector was 95.1 percent (830 of 873 inspections) in 2016, as shown in figure 37. One licensee received an unacceptable rating in this SCA, and a CNSC inspector issued an order to the licensee. As a result, the licensee implemented corrective measures to the satisfaction of the CNSC and the order has been closed.

Figure 37: Industrial sector performance – inspection ratings for security, 2014–16



7.3.6 Enforcement actions

The CNSC took 18 escalated enforcement actions against licensees in the industrial sector in 2016. These consisted of 12 orders and six administrative monetary penalties (AMPs). The number of enforcement actions taken against licensees in this sector has continued to rise since 2014. CNSC staff monitor the number of enforcement actions closely and take necessary measures to correct negative trends.

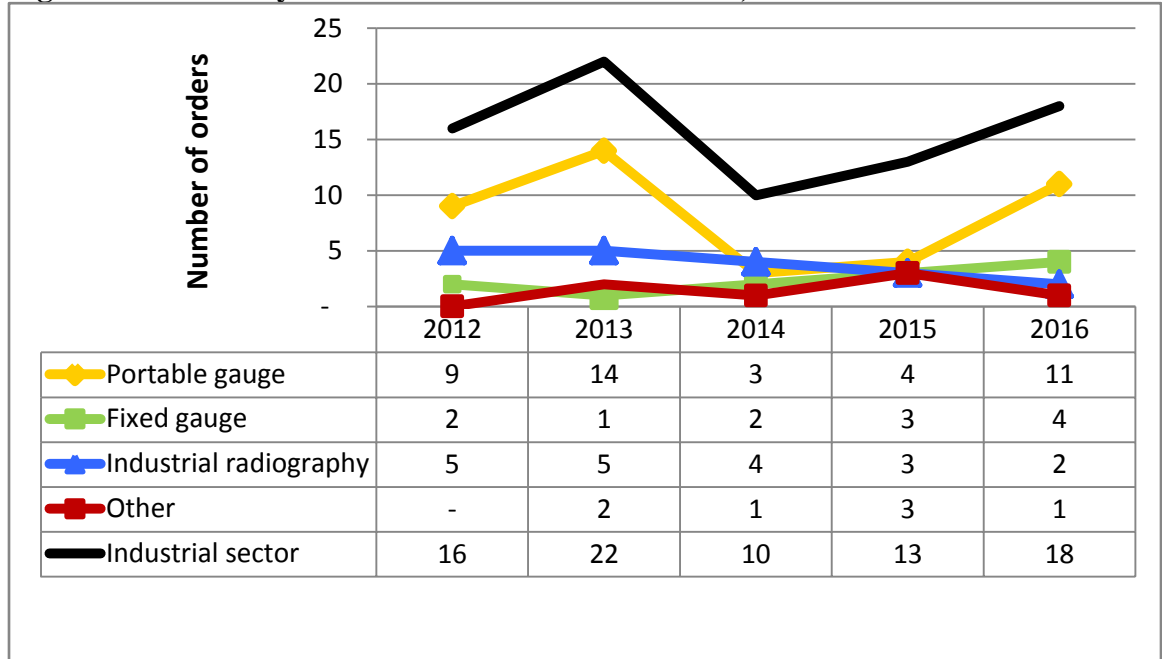
The CNSC issued seven orders against licensees in the portable gauge subsector, two in the industrial radiography subsector, two in the fixed gauge subsector and one in the oil well logging subsector. The distribution of orders by industrial subsectors from 2012 to 2016 is shown in figure 38.

The CNSC issued four AMPs to portable gauge licensees. Two were issued in conjunction with orders described above. One was issued in conjunction with an order issued in 2015. The fourth was issued as a result of the CNSC’s investigation of an event reported by the licensee.

In 2016, the CNSC issued enforcement actions to three fixed gauge licensees that performed vessel entry procedures without following the safety requirements prescribed by the CNSC in their licence conditions. One licensee received an order (listed above) and an AMP in 2016, the second received an order in 2016 (also listed above) and an AMP in 2017, and the third licensee received an AMP in 2016. The first two situations were identified during CNSC inspections, while the third case was brought to the attention of CNSC staff through mandatory event reporting by the licensee. In early 2017, in response to the non-compliances with requirements for entry into a vessel for which radiation devices are used, CNSC staff developed and distributed an information bulletin highlighting the requirements for safe vessel and hopper entry.

All licensees to which orders were issued complied with the terms and conditions of the orders and implemented corrective measures to the satisfaction of CNSC staff. The licensees that were issued AMPs have paid their penalty amounts.

Figure 38: Summary of orders in the industrial sector, 2012–16



Details of all enforcement actions issued in 2016 are provided in Figure 13 and [appendix C](#). Further information on regulatory actions, including escalated enforcement actions, taken by the CNSC is available on the [CNSC website](#).

8 ACADEMIC AND RESEARCH SECTOR

Licensed activities in the academic and research sector are conducted in universities, colleges and research laboratories. In 2016, this sector accounted for 208 licences and 7,240 total workers, of which 2,670 were designated as nuclear energy workers (NEWs).

Safety performance results are provided for all licensees included in the academic and research sector, with the laboratory studies and consolidated uses of nuclear substances subsectors highlighted in further detail.

Figure 39: Unsealed nuclear substance used in research laboratory (Source: CNSC)



8.1 Sector overview

This sector focuses mainly on biological and biomedical research that primarily uses open (unsealed) nuclear substances, as shown in figure 39. The sector also uses sealed sources, radiation devices and accelerators for teaching as well as for pure and applied research.

CNSC laboratory

As part of its regulatory functions, the CNSC conducts certain activities regulated under the *Nuclear Safety and Control Act* (NSCA). To ensure oversight transparency, CNSC management has separated the organization's work as a licensee (which resides within the Technical Support Branch) from its work as a regulator (under the responsibility of the Regulatory Operations Branch).

The CNSC laboratory provides calibration services and analytical services for CNSC staff, including CNSC inspectors. To provide these services, the CNSC holds two licences: one for its gamma calibration irradiator located at its laboratory in Ottawa, and a second for consolidated uses of nuclear substances that covers all other activities conducted by the CNSC at its laboratory or elsewhere in Canada. Both licences were issued in accordance with the NSCA and are regulated using the same licensing and compliance verification processes that would apply to other, similar licensees.

In this report, the CNSC laboratory is included in the laboratory studies and consolidated use of nuclear substances subsector. Its specific performance results

are provided to demonstrate that the CNSC, as both regulator and licensee, is reporting on its licensed activities in a transparent manner.

Doses received by NEWs working at the CNSC laboratory remained very low, with all workers receiving doses below 1 mSv.

In June 2016, CNSC staff conducted an unannounced inspection of an internal permit holder of the CNSC laboratory's consolidated uses of nuclear substances licence. No items of non-compliance were identified during the inspection.

8.2 Summary of safety assessment

The academic and research sector continued to show satisfactory safety performance in 2016.

Doses received by NEWs in this sector remained very low, with the majority of workers receiving doses below 1 mSv.

Of all the inspected licensees in 2016, the majority were found to be compliant in the four safety and control areas (SCAs) covered in this report:

- 97.3 percent were compliant in management system
- 91.4 percent were compliant in operating performance
- 91 percent were compliant in radiation protection
- 95.9 percent were compliant in security

In cases where non-compliances were noted during inspections, licensees took appropriate corrective actions, satisfactory to CNSC staff, to address the non-compliances.

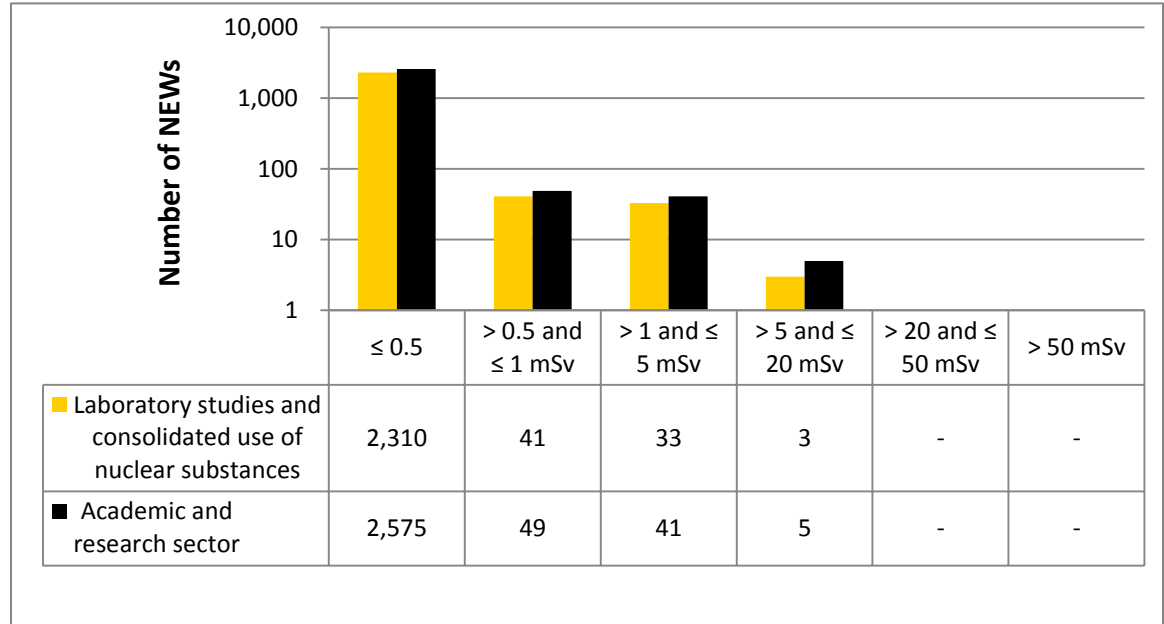
No enforcement actions were taken against licensees in the academic and research sector in 2016.

8.3 Sector performance measures

8.3.1 Doses to workers

Doses received by NEWs in this sector remained very low. The majority of workers received doses below 1 mSv, as shown in figure 40.

Figure 40: Academic and research sector performance comparison with the laboratory studies and consolidated use of nuclear substances subsector – annual effective doses of NEWs in 2016



Note: The total number of NEWs shown in the academic and research sector row is the aggregate for the entire sector, including subsectors not highlighted in this report.

8.3.2 Management system

In 2016, the compliance rating for management system in the academic and research sector was 97.3 percent (73 of 75 inspections), as shown in figure 41. No licensees received unacceptable ratings in this SCA. A sector-to-subsector comparison is shown in figure 42.

Figure 41: Academic and research sector performance – details of management system inspection ratings, 2015–16

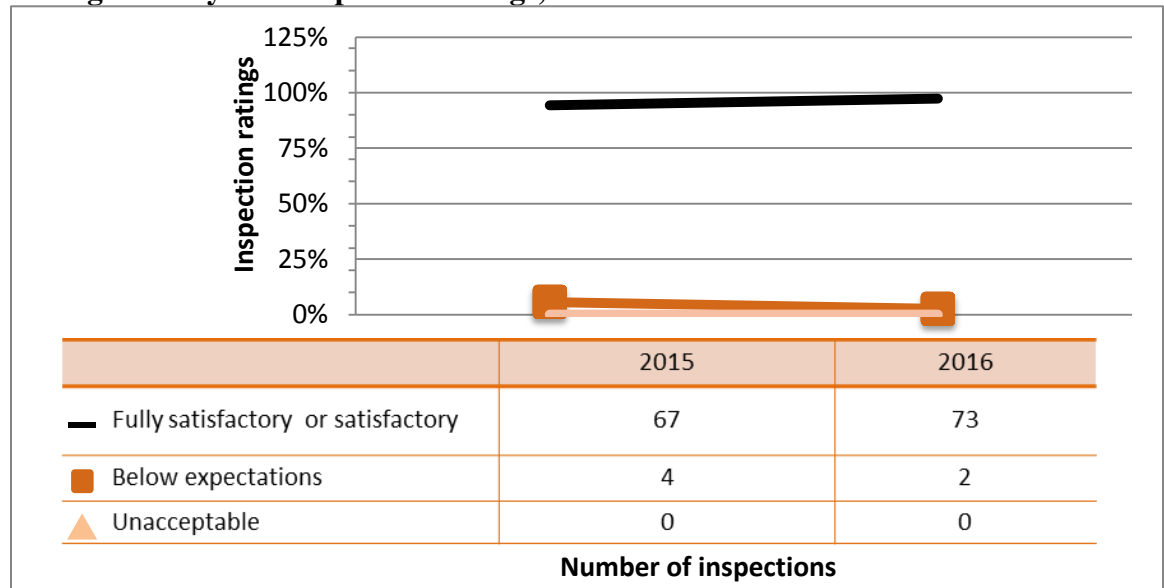
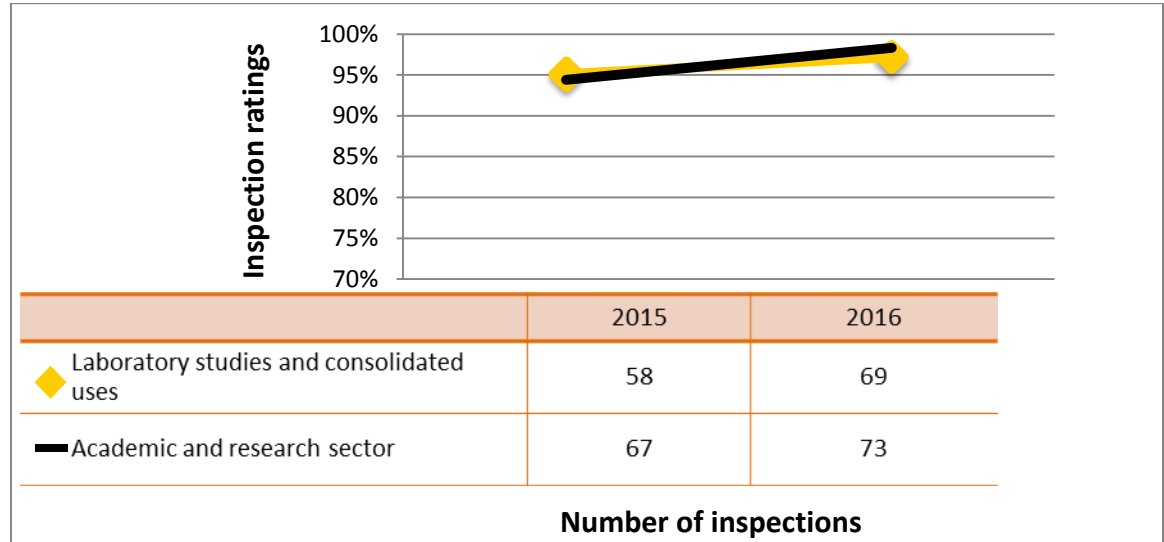


Figure 42: Academic and research sector performance comparison with the laboratory studies and consolidated use of nuclear substances subsector – inspection ratings meeting or exceeding expectations of management systems, 2015–16



Note: The number of inspections shown in the academic and research row is the aggregate for the entire sector, including subsectors not highlighted in this report.

8.3.3 Operating performance

The overall compliance rating for operating performance in the academic and research sector was 91.4 percent (74 of 81 inspections) in 2016, as shown in figure 43. This is a significant improvement in performance over 2015, when only 77.4 percent of inspected licensees were compliant to requirements in this SCA. A sector-to-subsector comparison for operating performance ratings is provided in figure 44. The laboratory studies and consolidated uses of nuclear substances subsector is the main driver of the rating in this SCA. The main non-compliance involved not following procedures.

In 2014, the CNSC inspection program for the laboratory studies and consolidated uses of nuclear substances subsector was revised based on the positive safety performance ratings and the low-risk level associated with these licensed activities. The frequency of CNSC inspections was changed from annually to every two years, which is reflected in the decrease in the number of inspections conducted since 2014 for this subsector.

Figure 43: Academic and research sector performance – inspection ratings of operating performance, 2012–16

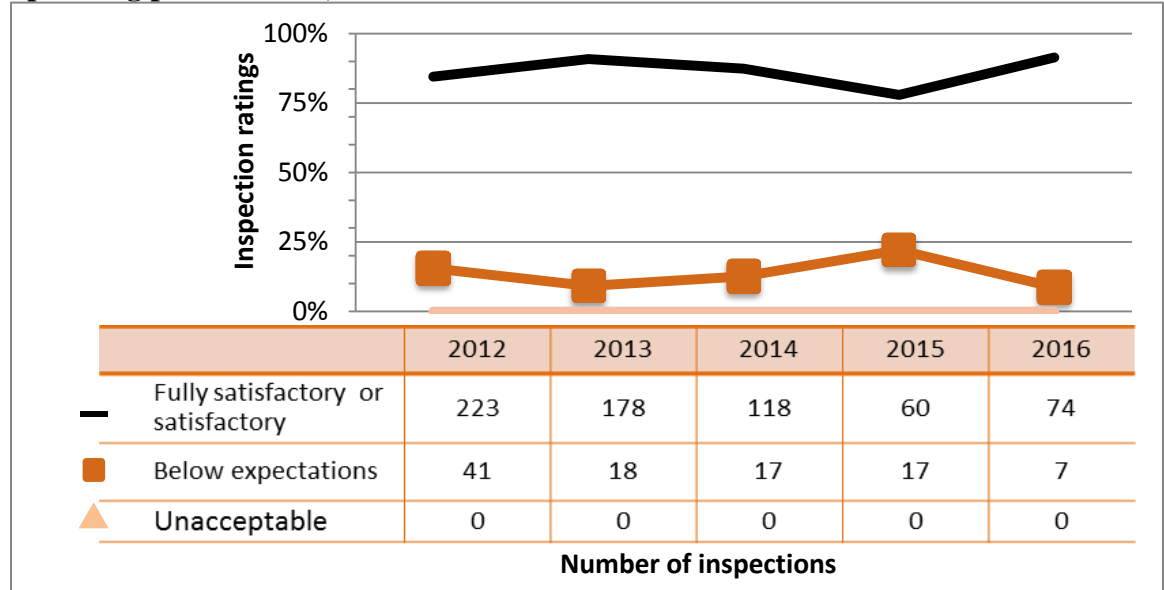
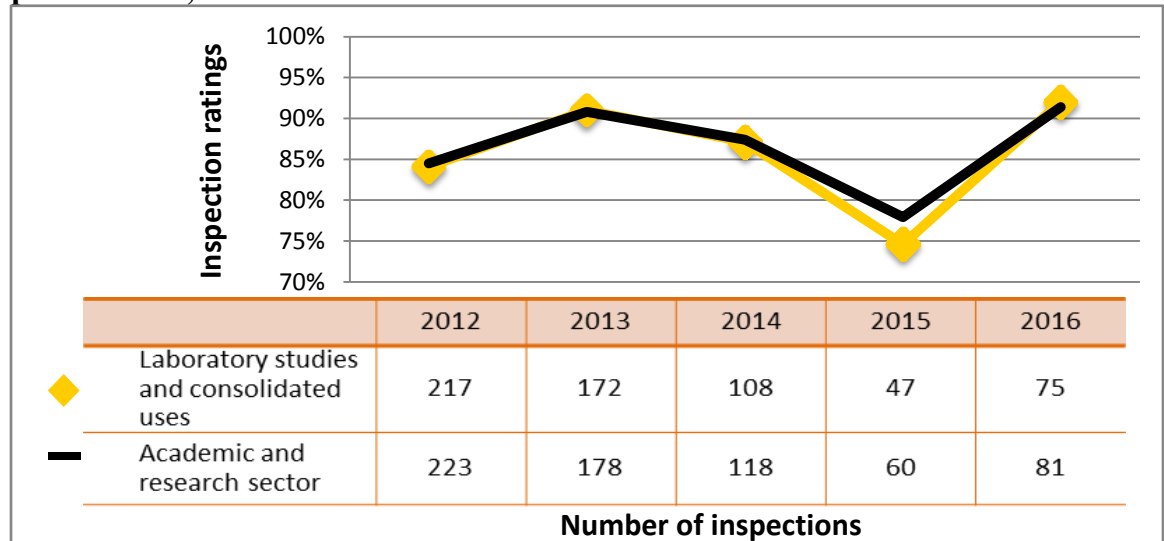


Figure 44: Academic and research sector performance comparison with the laboratory studies and consolidated use of nuclear substances subsector – inspection ratings meeting or exceeding expectations of operating performance, 2012–16



Note: The number of inspections shown in the academic and research row is the aggregate for the entire sector, including subsectors not highlighted in this report.

8.3.4 Radiation protection

The overall compliance rating for radiation protection in the academic and research sector was 91 percent (71 of 78 inspections) in 2016, as shown in figure 45. A sector-to-subsector comparison for radiation protection ratings is provided in figure 46.

Figure 45: Academic and research sector performance – inspection ratings of radiation protection, 2012–16

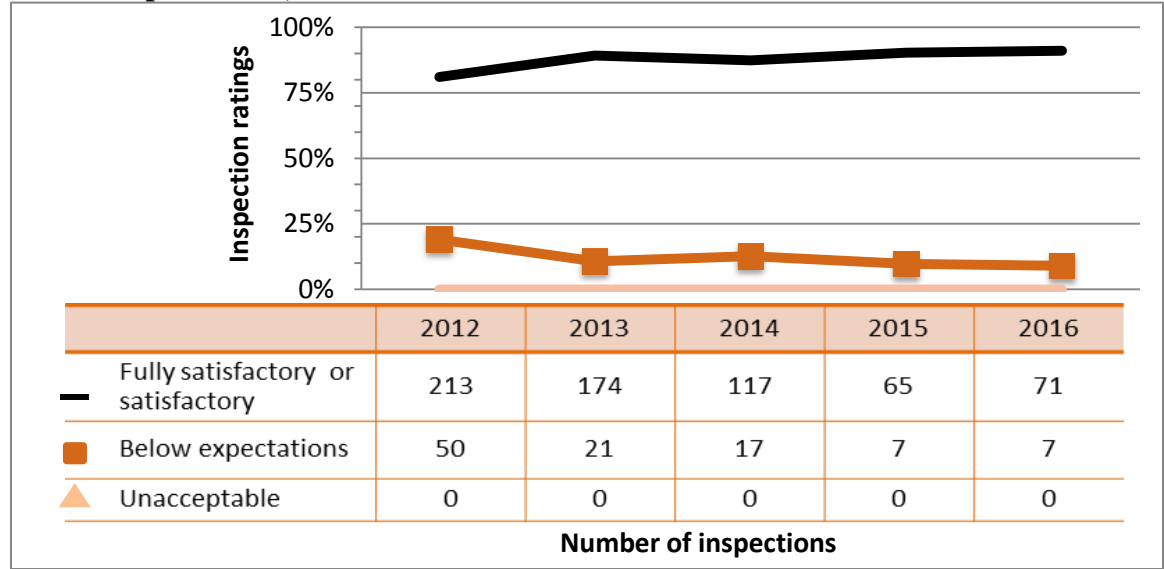
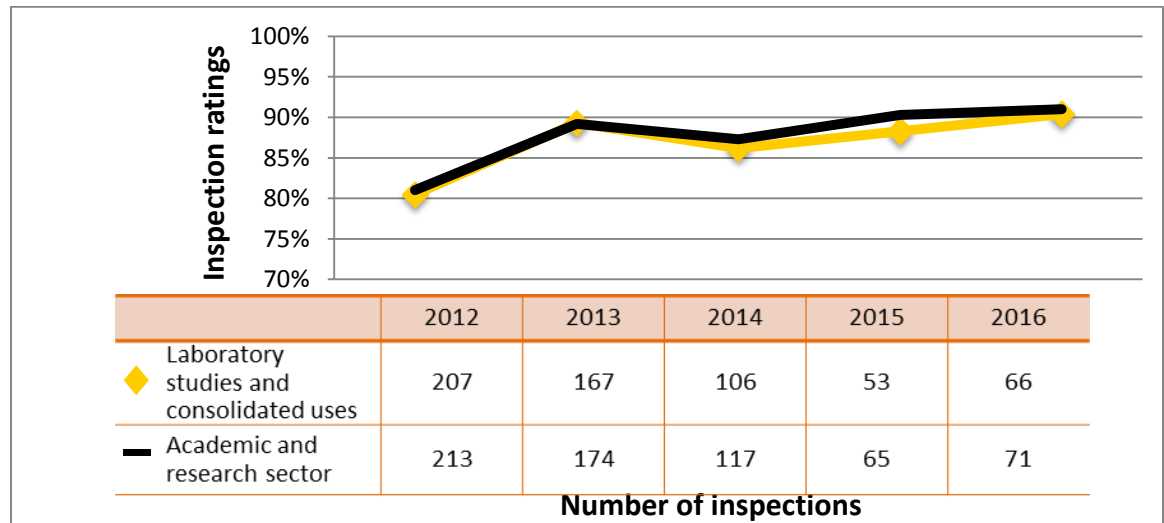


Figure 46: Academic and research sector performance comparison with the laboratory studies and consolidated use of nuclear substances subsector – inspection ratings meeting or exceeding expectations of radiation protection, 2012–16

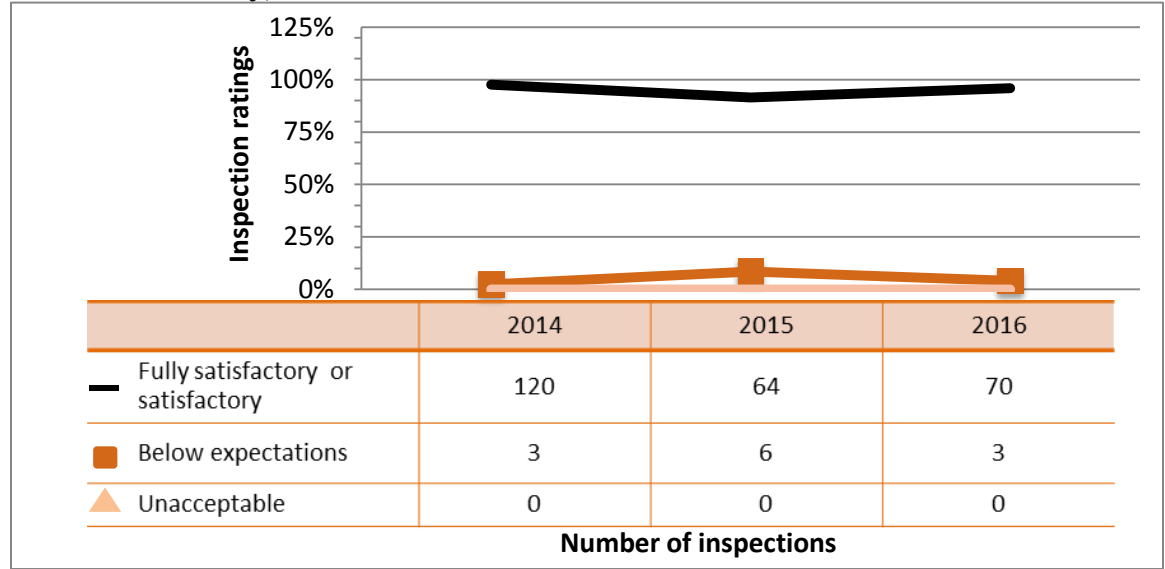


Note: The number of inspections shown in the academic and research row is the aggregate for the entire sector, including subsectors not highlighted in this report.

8.3.5 Security

The compliance rating for security SCA for licensees in the academic and research sector was 95.9 percent (70 of 73 inspections) in 2016, as shown in figure 47. This is consistent with the sector’s performance over the last two years.

Figure 47: Academic and research sector performance – inspection rating details for security, 2014–16



9 COMMERCIAL SECTOR

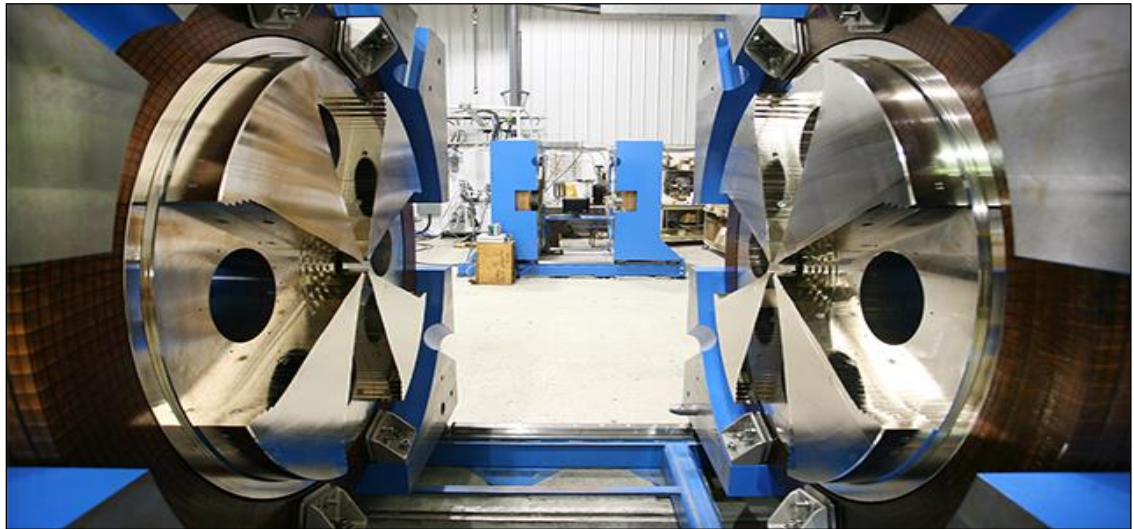
The commercial sector encompasses a number of licensed activities related to the production, processing, storage and distribution of nuclear substances, the calibration of radiation detection instruments, as well as the servicing of radiation devices and Class II prescribed equipment as a commercial enterprise. In 2016, this sector accounted for 247 CNSC licences and 1,899 total workers, including 1,378 designated as nuclear energy workers (NEWs).

Safety performance results are provided for all licensees included in the commercial sector, with the following five subsectors highlighted in further detail:

- isotope production accelerators
- processing of nuclear substances
- distribution of nuclear substances
- servicing of radiation devices and prescribed equipment
- calibration of radiation devices and prescribed equipment

Figure 48 shows the internal components of a partially assembled cyclotron used for the production of radioisotopes.

Figure 48: Isotope production accelerator (Source: CNSC)



9.1 Sector overview

The commercial sector encompasses a number of licensed activities related to the production, processing, storage and distribution of nuclear substances, and the calibration and servicing of radiation devices for commercial gain.

Isotope-production cyclotrons can produce a range of different radioisotopes that are widely used in the diagnosis, management and treatment of disease. Most licensees in the processing of nuclear substances subsector process isotopes to provide products and services used for the prevention, diagnosis and treatment of disease. Distributors of radiation devices and nuclear substances are the link

between the manufacturer and the end user. In some cases (for example, smoke detectors), end users are not required to hold licences for devices; however, those companies that distribute such products in Canada are. A licence is required to calibrate radiation detection instruments such as radiation survey meters. Licensees with calibration licences use nuclear substances and radiation devices to determine the response of radiation detection instruments. Installation, repair and non-routine maintenance of radiation devices and prescribed equipment located in Canada requires a servicing licence issued by the CNSC, even if the licensee's headquarters is located outside Canada.

9.2 Summary of safety assessment

The commercial sector continued to show good safety performance in 2016.

Doses received by NEWs in this sector remained low. The majority of workers received doses below 1 millisievert (mSv).

Of all the inspected licensees in 2016, the majority were found to be compliant in the four SCAs covered in this report:

- 96.4 percent were compliant in management system
- 92.0 percent were compliant in operating performance
- 91.8 percent were compliant in radiation protection
- 98.5 percent were compliant in security

In cases where non-compliances were noted during the inspection, licensees took appropriate corrective actions, satisfactory to CNSC staff, to address the non-compliances.

The CNSC took escalated enforcement actions against two licensees in the commercial sector.

- The CNSC issued an order and an administrative monetary penalty (AMP) to a licensee that offers calibration services. The order was issued during an inspection when the CNSC inspector determined that the licensee had serious gaps in the implementation of its radiation safety program and worker training. The AMP was issued following an assessment by the CNSC during which inspectors discovered that the licensee had presented for transport, and subsequently transported, nuclear substances in packages that did not meet the applicable regulatory requirements. CNSC staff reviewed the corrective measures implemented by the licensee and found them to be satisfactory. The licensee has paid the AMP.
- The CNSC also issued an order to a licensee that produces radiopharmaceuticals for servicing prescribed equipment without a licence.

Additional details about the enforcement actions are found in [appendix C](#).

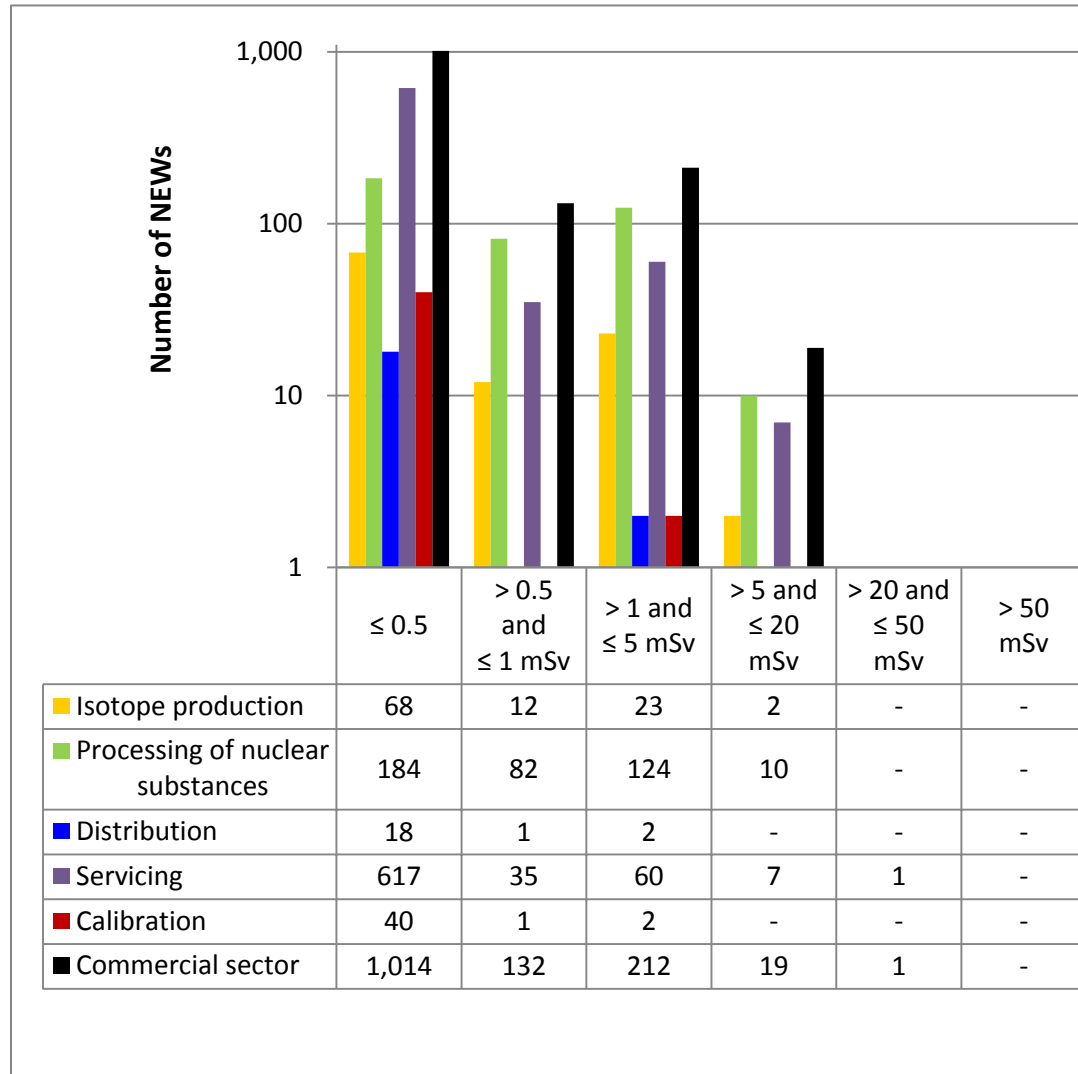
9.3 Safety performance measures

9.3.1 Doses to workers

NEWs in the isotope production accelerators and processing of nuclear substances subsectors continued to receive higher doses than workers in other commercial subsectors, as shown in figure 49. This is due to their manual handling of nuclear substances and activated cyclotron components. The vast majority of NEWs in these subsectors received doses below 5 mSv in 2016.

Annual effective doses for NEWs in the isotope production accelerators subsector from 2012 to 2016 are shown in figure 50. Annual effective doses for NEWs in the processing of nuclear substances subsector from 2012 to 2016 are shown in figure 51.

Figure 49: Commercial sector performance comparison with select subsectors – effective doses to NEWs in 2016



Note: The total number of NEWs shown in the commercial sector is the aggregate for the entire sector, including subsectors not highlighted in this report.

Figure 50: Isotope production accelerators subsector performance – annual effective doses to NEWs, 2012–16

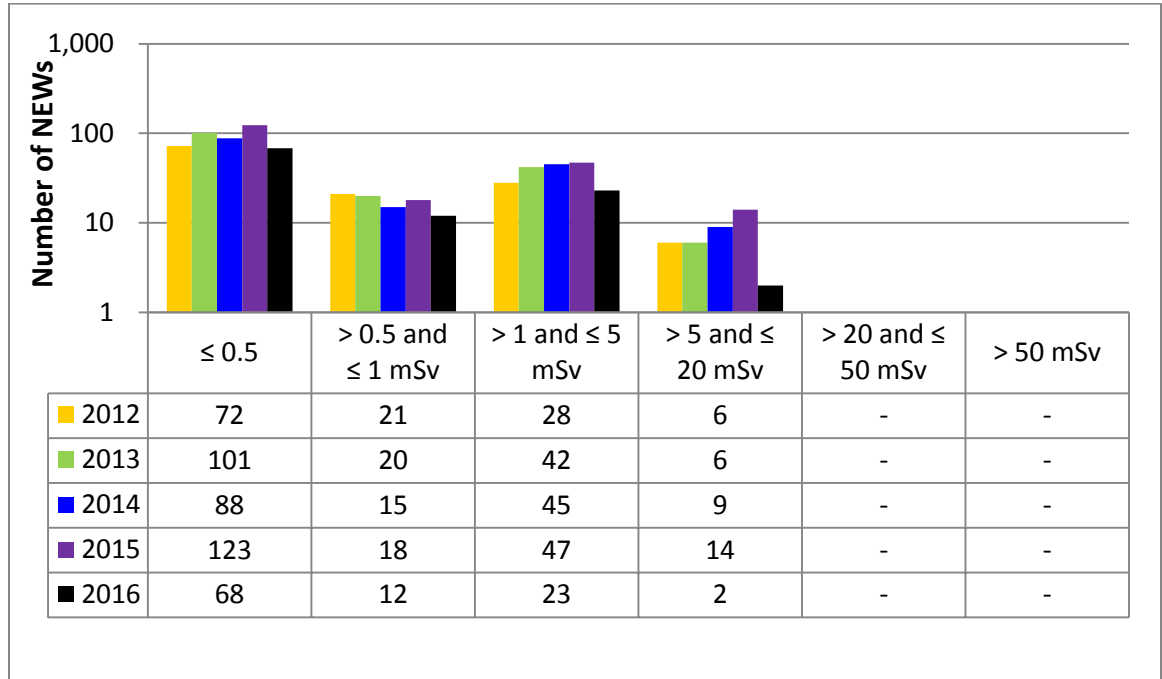
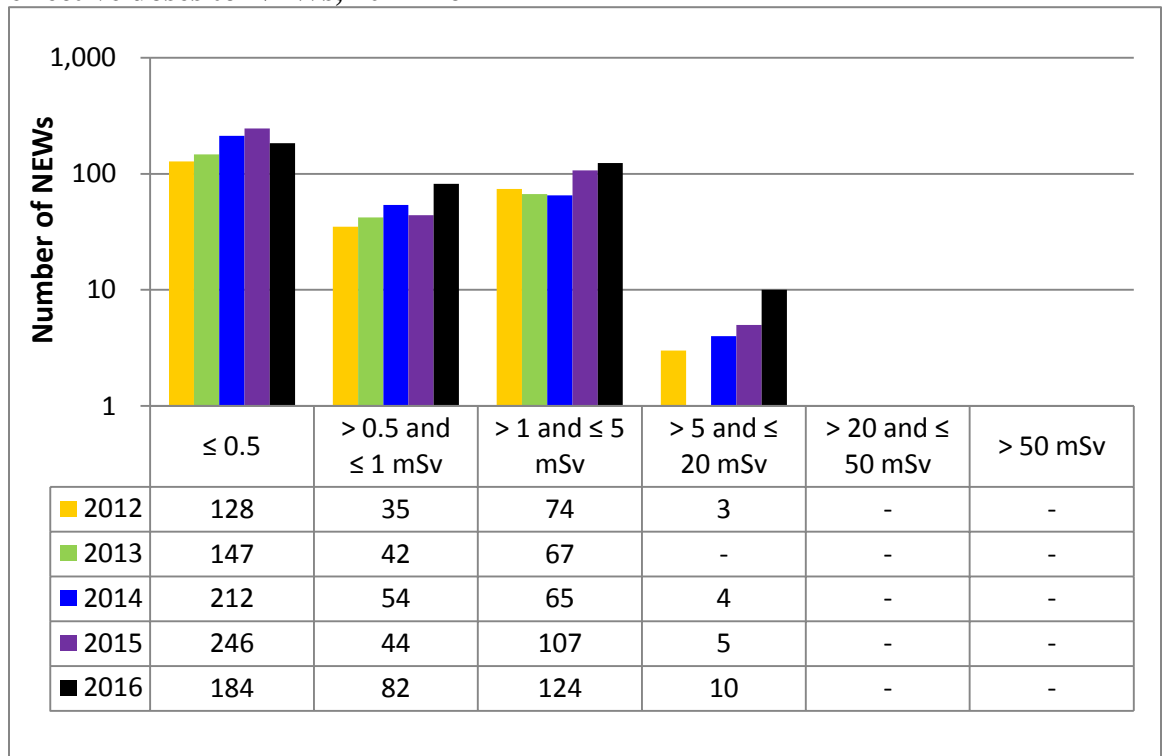


Figure 51: Processing of nuclear substance subsector performance – annual effective doses to NEWs, 2012–16



9.3.2 Management system

Commercial sector licensees had an overall compliance rating in the management system SCA of 96.4 percent (80 of 83 inspections). All three instances of non-compliance were due to licensees conducting activities outside the scope of their licences. An order and an AMP were issued to one licensee as a result of its non-compliance to this requirement.

The compliance ratings for the sector as a whole are shown in figure 52. Figure 53 shows the breakdown of compliant inspections by subsector. The calibration subsector showed a decrease in compliance to requirements in the management system SCA compared to 2015. Because there were only seven inspections of calibration licensees, and this is only the second year the CNSC has presented data on management systems, it is too early to determine whether it is a trend.

Figure 52: Commercial sector performance – inspection rating details of management systems performance, 2015–16

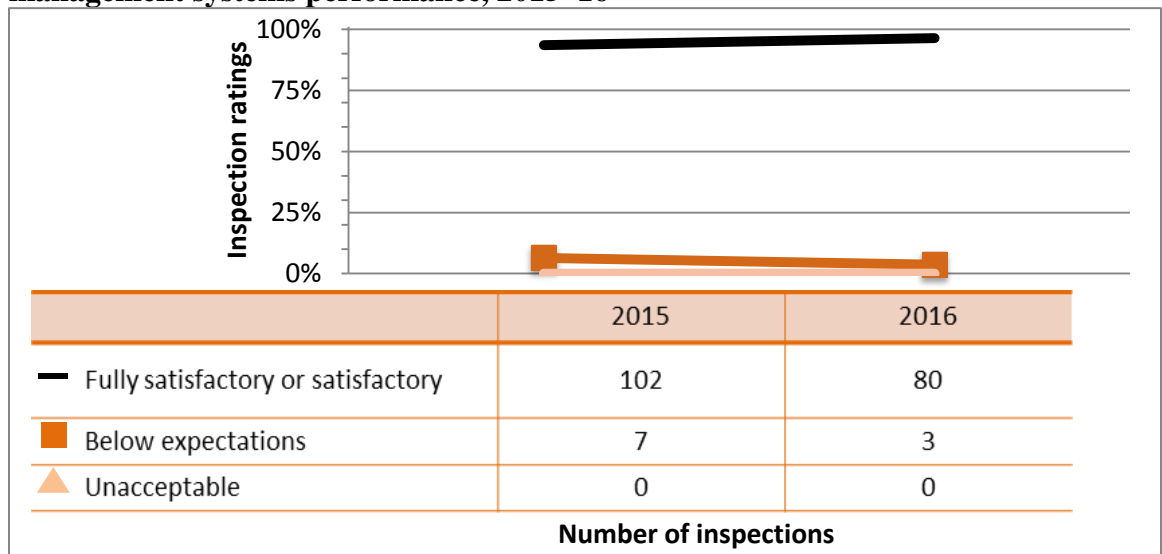
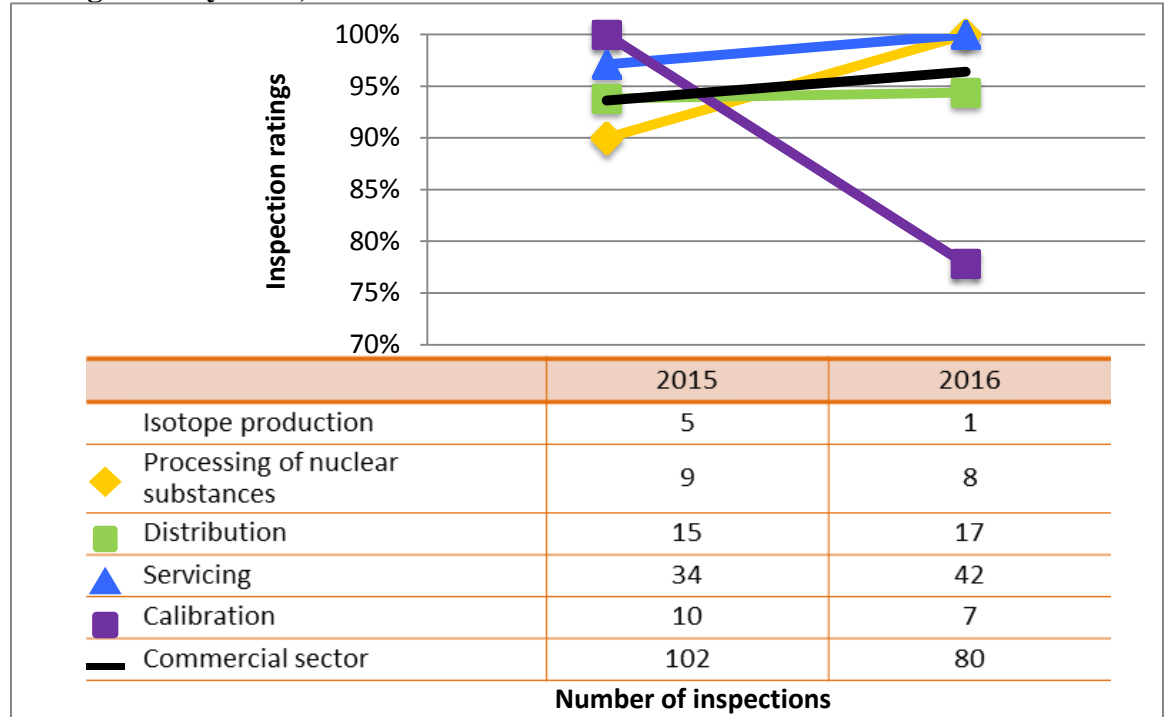


Figure 53: Commercial sector performance comparison with highlighted subsectors – inspection ratings meeting or exceeding expectations of management systems, 2015–16



Note: The number of inspections shown in the commercial sector row is the aggregate for the entire commercial sector, including subsectors not highlighted in this report. The trend line was not provided for the isotope production accelerators subsector due to the low number of inspections conducted.

9.3.3 Operating performance

The overall compliance rating in 2016 for operating performance in the commercial sector was 92 percent (80 of 87 inspections), as shown in figure 54. A sector-to-subsector comparison for operating performance ratings is provided in figure 55.

The most common non-compliances involved workers not following licensee procedures or not using the provided safety equipment, and licensees not keeping records for servicing work they performed for others.

The processing of nuclear substance subsector has showed a downward trend in compliance ratings since 2013.

Figure 54: Commercial sector performance – inspection ratings of operating performance, 2012–16

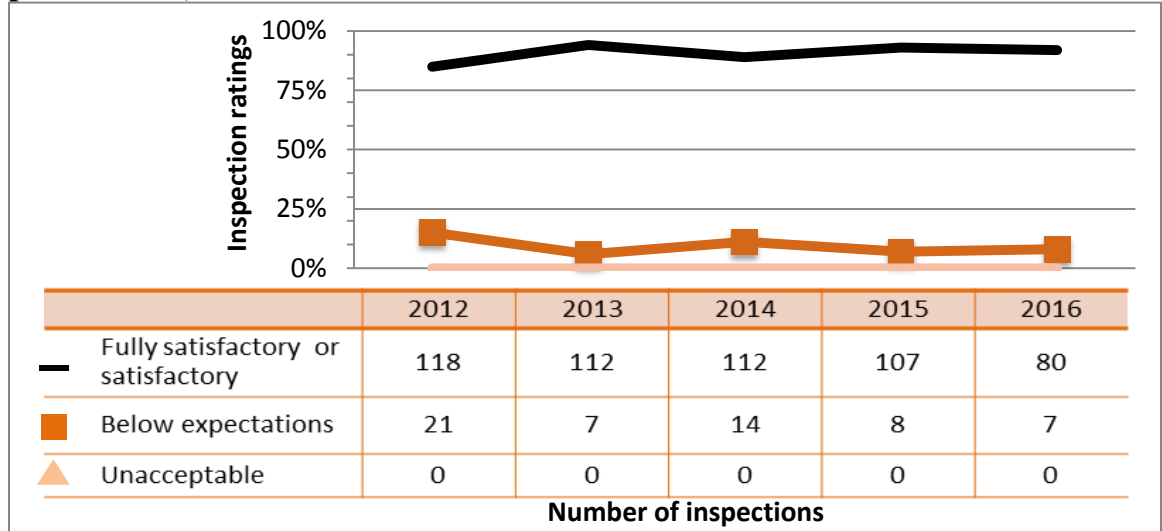
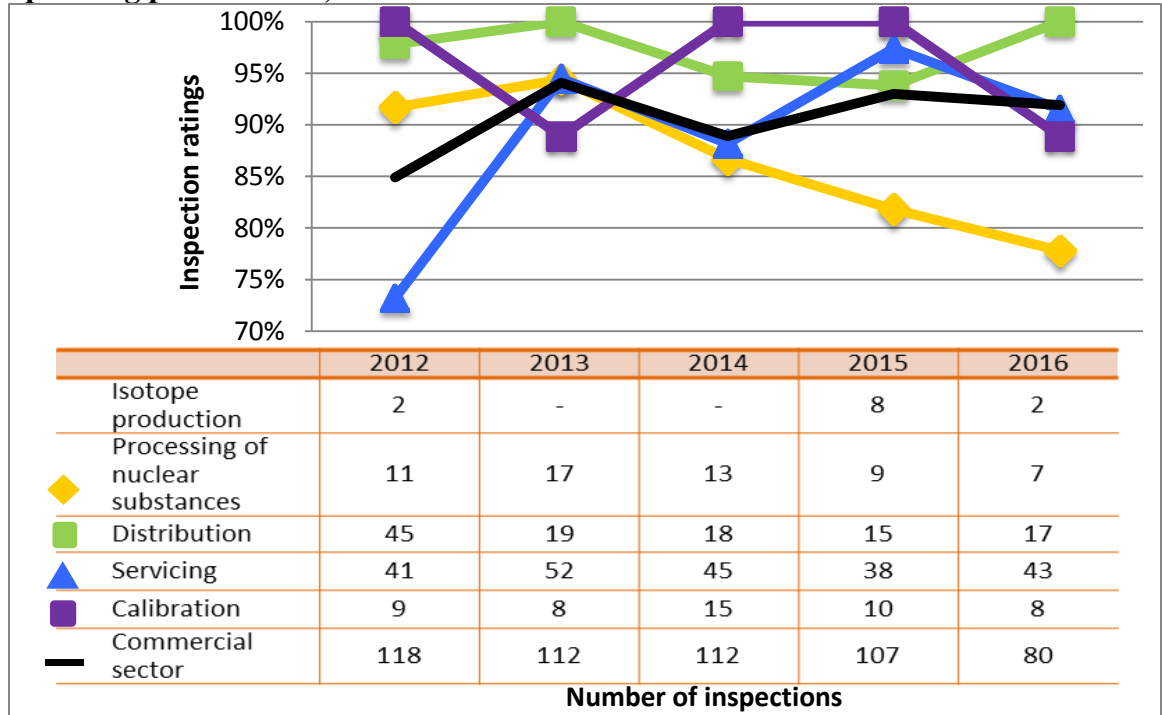


Figure 55: Commercial sector performance comparison with highlighted subsectors – inspection ratings meeting or exceeding expectations of operating performance, 2012–16



Note: The number of inspections shown in the commercial sector row is the aggregate for the entire commercial sector, including subsectors not highlighted in this report. The trend line was not provided for the isotope production accelerators subsector due to the low number of inspections conducted.

9.3.4 Radiation protection

The overall compliance rating for radiation protection in the commercial sector was 91.9 percent (79 of 86 inspections) in 2016, as shown in figure 56. A sector-to-subsector comparison for radiation protection ratings is provided in figure 57.

The most common non-compliance was licensees failing to implement radiation protection programs that keep doses to workers and the public ALARA.

Figure 56: Commercial sector performance – inspection ratings of radiation protection, 2012–16

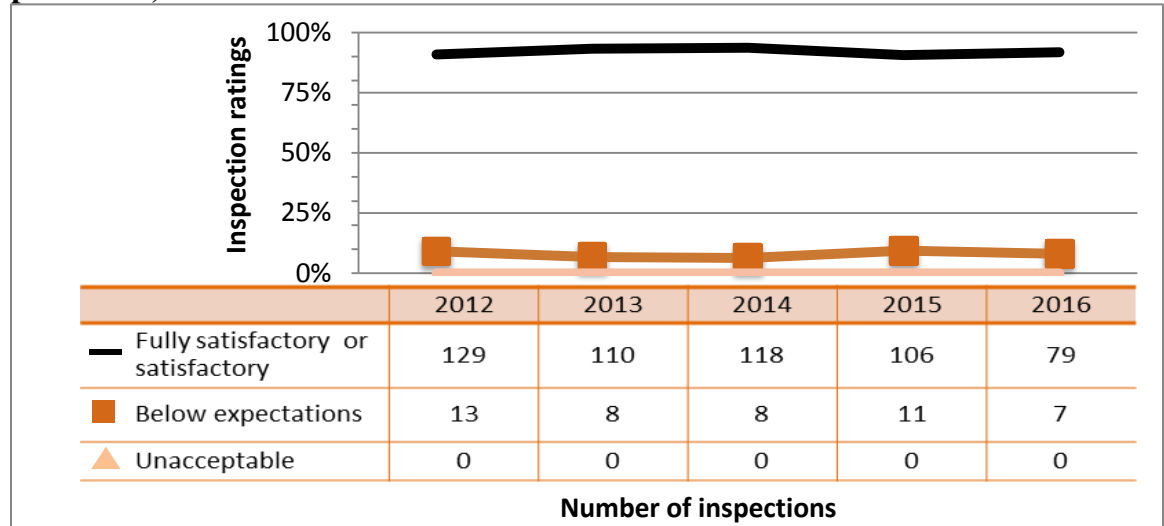
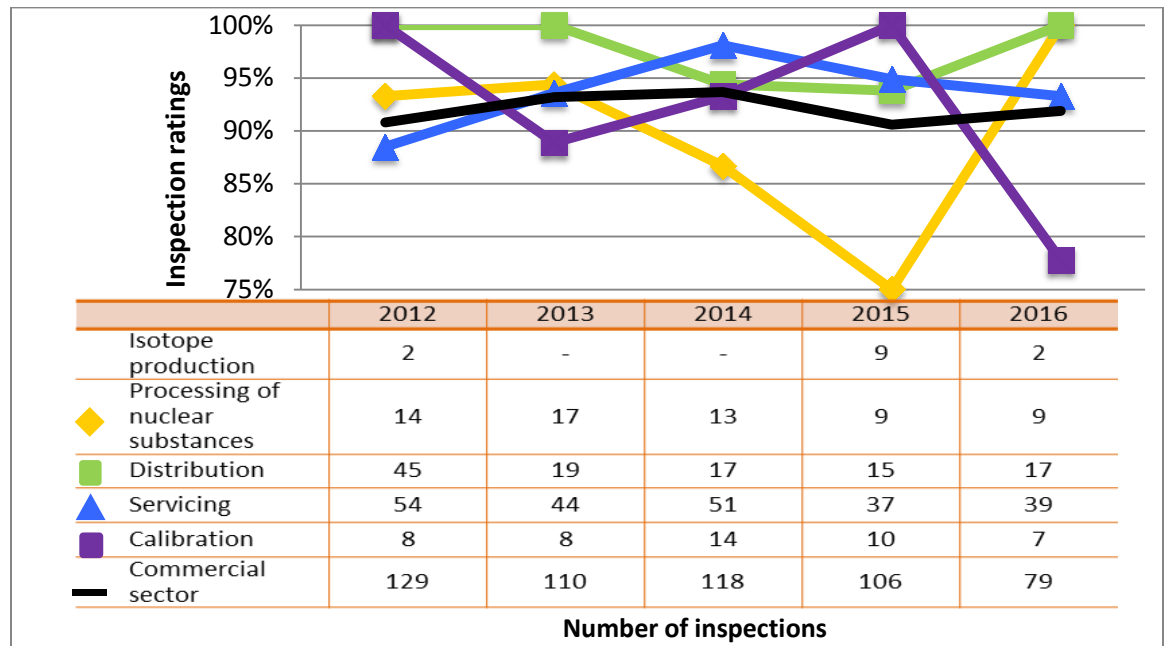


Figure 57: Commercial sector performance comparison with highlighted subsectors – inspection ratings meeting or exceeding expectations of radiation protection, 2012–16

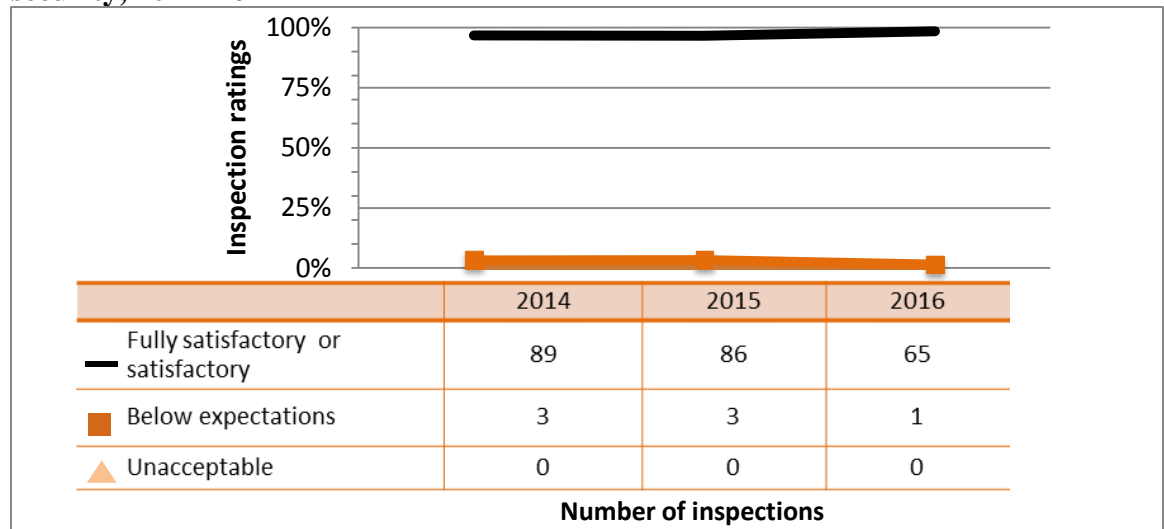


Note: The number of inspections shown in the commercial sector row is the aggregate for the entire commercial sector, including subsectors not highlighted in this report. The trend line was not provided for the isotope production accelerators subsector due to the low number of inspections conducted.

9.3.5 Security

The compliance rating for security SCA for licensees in the commercial sector was 98.5 percent (65 of 66 inspections) in 2016, as shown in figure 58.

Figure 58: Commercial sector performance – inspection rating details for security, 2014–16



10 CONCLUSION

CNSC staff continued their ongoing regulatory oversight of licensees in the medical, industrial, academic and research, and commercial sectors. Staff conducted compliance verification activities consisting of field inspections, desktop reviews and technical assessments of licensee activities, and concluded that the use of nuclear substances in Canada is safe. The evaluations of findings for the safety and control areas (SCAs) covered in this report show that, overall, licensees made adequate provisions for the protection of the health, safety and security of persons and the environment from the use of nuclear substances, and took the measures required to implement Canada's international obligations.

Compliance verification

In 2016, CNSC staff conducted 1,452 inspections to verify compliance with CNSC regulatory requirements across all sectors, including 228 security inspections related to the implementation of [REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources*](#), and three inspections related to the export of high-risk sealed sources. Of inspected licensees, the majority were found to be compliant in the four SCAs covered in this report:

- 97.5 percent were compliant in management system
- 87.4 percent were compliant in operating performance
- 84.6 percent were compliant in radiation protection
- 93.6 percent were compliant in security

Those licensees failing to meet requirements took appropriate corrective measures to address non-compliances found during inspections. CNSC staff systematically tracked all non-compliances until licensees took the appropriate corrective measures to address them. All corrective measures put in place by licensees were reviewed by CNSC staff and found to be satisfactory.

Effective doses to workers

Doses to workers remained very low in 2016, consistent with previous years. One of the 22,606 nuclear energy workers (NEWs) received an equivalent dose above the CNSC regulatory dose limit of 500 millisieverts (mSv) for the hands and feet. Appropriate corrective actions were taken by the licensee in response to this event, which CNSC staff reported to the Commission in December 2016. None of the workers designated as NEWs exceeded the one-year effective dose limit of 50 mSv.

Enforcement actions

In 2016, the CNSC took escalated enforcement actions in 22 instances. It issued 14 orders and eight administrative monetary penalties to ensure that the health and safety of workers, the Canadian public and the environment were being adequately protected. Most of the enforcement actions were taken against licensees in the industrial sector, consistent with trends from previous years. All licensees to whom orders were issued have implemented corrective measures,

which were reviewed by CNSC staff and found to be satisfactory. All eight administrative monetary penalties (AMPs) issued in 2016 have been paid.

Reported events

Licensees reported 139 events to the CNSC that are covered in this report – all of which were assessed by CNSC staff. Of the total number of events reported, 136 were categorized as level 0 (no safety significance) on the International Nuclear and Radiation Events Scale. A further two events were ranked as level 1 (anomaly) due to the quantity of nuclear substances involved and the type of event reported (i.e., the loss of nuclear substances). The remaining event – ranked at level 2 (incident) – resulted in a NEW receiving a dose to the hands dose above the regulatory limit.

There were no releases of nuclear substances to the environment that had an adverse radiological impact or that resulted in a person receiving a dose in excess of the regulatory limit for members of the public.

One member of the public received a dose in excess of the annual regulatory dose limit of 1 mSv after taking a ride from a ride-sharing service in a vehicle in which the driver was also transporting packages containing nuclear substances. The event was reported to the Commission in December 2016. An AMP was issued to the driver in 2017.

For all reported events, licensees implemented appropriate response measures to mitigate the impacts of the events and to limit radiation exposure to workers and the public. These measures were reviewed by CNSC staff and found to be satisfactory.

Regulatory focus in 2017

In 2017, the CNSC will continue to focus on effective regulatory oversight and continuous improvement, with greater emphasis on:

- using Type I inspections for compliance verification of large licensees
- clarifying expectations for reportable events with the development of regulatory document REGDOC-3.1.2 Part II - *Reporting Requirements for Nuclear Substances and Radiation Devices*
- enhancing oversight of radiation safety officers across all sectors
- preparing licensees with Category 3, 4 and 5 sealed sources to be compliant with the expectations of [REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources](#) which comes into effect May 31, 2018
- increased focus on compliance verification of fixed gauge licensees with the licence condition for vessel or hopper entry
- implementing regulatory oversight programs for new devices and technologies, particularly in the healthcare sector
- an increased number of applications for certification of prescribed equipment and radiation devices due to the expiry of many existing certificates

Conclusion

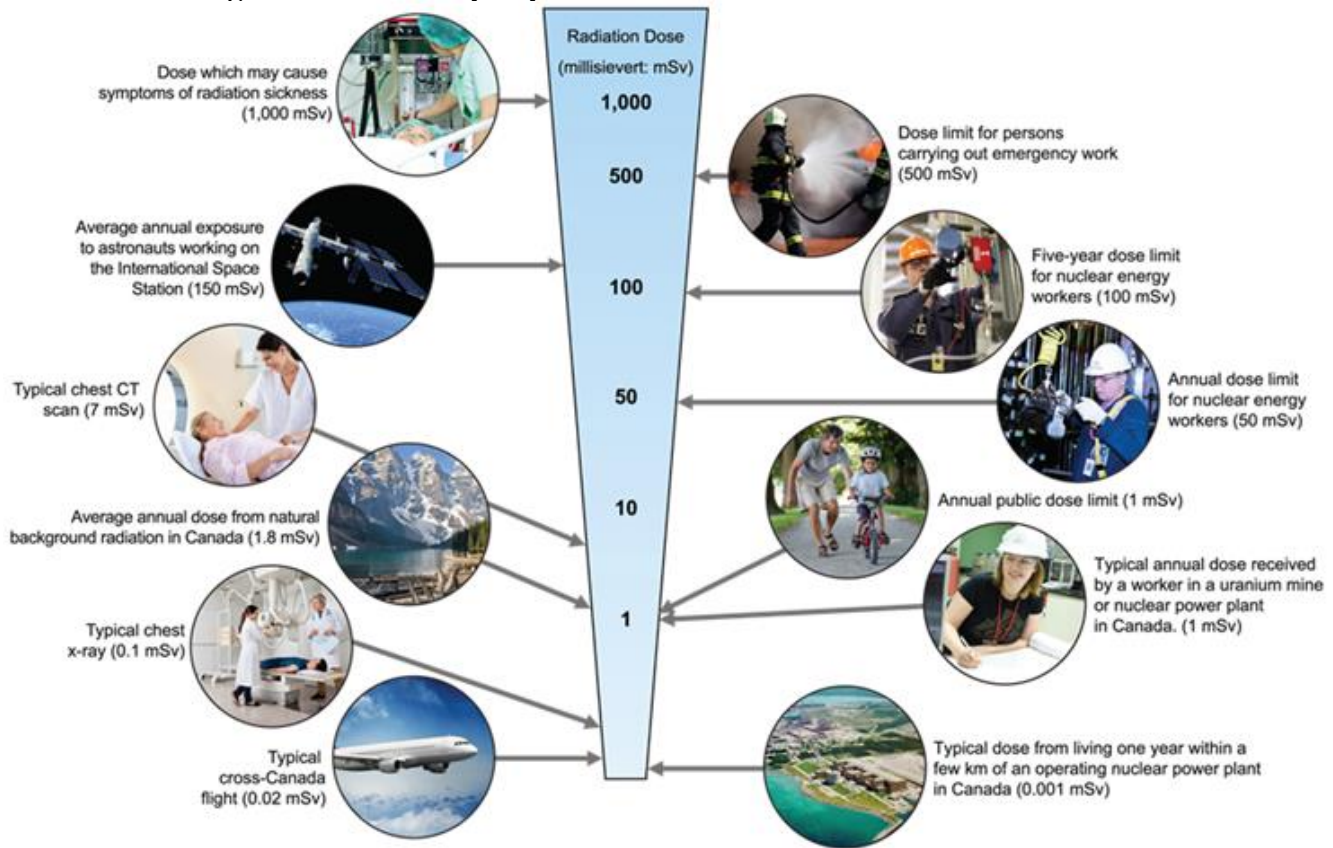
The use of nuclear substances in Canada is safe. Adequate provisions for the protection of the health, safety and security of persons and the environment from the use of nuclear substances are in place.

Appendix A : Radiation exposure

Non-occupational exposure to radiation can occur in many situations. For example, a person may be exposed to radiation during an airplane flight or by undergoing a medical procedure such as a chest X-ray. Natural background radiation contributes to radiation exposure received by all persons living on earth. The average annual dose from natural background radiation is approximately 1.8 millisieverts (mSv) in Canada and 2.4 mSv worldwide. Among major Canadian cities, Winnipeg has the highest annual average dose from [background radiation](#) at 4.1 mSv.

Figure 59 provides some perspective on these situations as they relate to doses to the public as well as occupational radiation exposures received by workers as a result of both nuclear activities licensed by the CNSC and natural

Figure 59: Doses in perspective



Ascertaining effective dose

In this report, effective dose refers to the dose received by the whole body. Each licensee is required to ascertain the effective dose received by each worker engaged in activities authorized under their CNSC licence. Doses may be ascertained by direct measurement (through monitoring) or by estimation, in accordance with the *Radiation Protection Regulations*. The *Radiation Protection*

Regulations also stipulate that the licensee must use a licensed dosimetry service for monitoring every nuclear energy worker who has a reasonable probability of receiving an effective dose of greater than 5 mSv per year. However, regardless of the potential for occupational exposure, licensees conducting licensed activities in certain industries, such as industrial radiography, are always required to use a licensed dosimetry service provider to ascertain doses for the nuclear energy workers they employ (under subsection 30(3) of the [*Nuclear Substances and Radiation Devices Regulations*](#)).

When a dose limit is exceeded

In a situation where a worker may have exceeded a regulatory dose limit, licensees are required to remove the worker from any activities that may add to his or her dose, investigate the cause of the exposure, take action to prevent a recurrence, and report to the CNSC. CNSC staff review the information provided by the licensee following each investigation. Depending on the circumstances, the Commission, or in most cases a designated officer authorized by the Commission, may authorize the worker to return to work according to the process defined in the *Radiation Protection Regulations*. The return-to-work authorization may specify conditions and prorated dose limits for the remainder of the dosimetry period.

Appendix B: Safety and control area naming conventions

Safety and control areas (SCAs) used in this report reflect the standardized set and naming convention approved for CNSC licensed activities, as shown the left-hand column of Table 5. For historical reasons, a modified naming convention of SCAs is used for the inspections of nuclear substances activities covered in this report (i.e., licensees that use nuclear substances). See the right-hand column of Table 5. In the near future, the CNSC intends to adopt the standardized naming convention of SCAs for all types of licensees that use nuclear substances. It should be noted that not all SCAs are considered for the inspection of nuclear substances activities and facilities.

Table 5: Differences in naming conventions for safety and control areas

Safety and control area	Safety and control area: Inspection reports
Management system	Organization and management Quality management
Human performance management	Training and qualification
Operating performance	Operational procedures
Safety analysis	Facility shielding design Facility safety systems
Physical design	Facility shielding design Facility safety systems
Fitness for service	Entrance and exit monitors Alarms and status machines Fault indicators
Radiation protection	Radiation protection
Conventional health and safety	Non-radiological health and safety
Environmental protection	Environmental protection
Emergency management and fire protection	Emergencies and unplanned events Fire protection
Waste management	Environmental protection
Security	Security
Safeguards	International obligations and safeguards
Packaging and transport	Packaging and transport

Appendix C: Enforcement actions issued in 2016

CNSC designated officers issued a total of 22 enforcement actions in the form of 14 orders and eight administrative monetary penalties (AMPs) in 2016. Details of the orders issued are shown in table 6. Details of AMPs are provided in table 7.

Table 6: Orders issued to licensees in 2016

Issue date and location	Licensee (subsector)	Licensee response	Closure date
March 10 (Fort Saskatchewan, Alberta)	PML Inspection Services Ltd. (Industrial radiography)	Ceased all radiography operations until an effective radiation protection program was implemented. Corrected all items of non-compliance to the CNSC's satisfaction.	March 21
March 11 (Sarnia, Ontario)	Tomlinson Enterprises Ltd. (Industrial radiography)	Ceased all radiography operations until all exposure devices were serviced by a qualified individual, and all exposure device operators and trainees received training on the licensee's procedures for transporting radioactive sources and exposure devices.	March 16
March 18 (Merlin, Ontario)	Nuclear Services Canada Inc. (Calibration)	Ceased all activities involving radioactive materials until: all employees received training on the licensee's radiation safety program, demonstrated compliance with all requirements for the transportation of radioactive materials, and corrected all items of non-compliance to the satisfaction of the CNSC. Conducted worker dose ascertainments and submitted the results to the CNSC.	May 2
March 24 (Sarnia, Ontario)	Canadian Tower Scanning Inc. (Oil well logging)	Ceased all activities involving radioactive materials until all employees received training on all aspects of the licensee's radiation safety program. Corrected all items of non-compliance to the satisfaction of the CNSC. Conducted a complete dose ascertainment for workers handling radioactive sources and submitted the results to the CNSC.	April 20

Issue date and location	Licensee (subsector)	Licensee response	Closure date
June 1 (Vernon, British Columbia)	Hoban Equipment Ltd. (Portable gauge)	Ceased all use of portable gauges and placed them in secure storage until correction of all non-compliances to the satisfaction of the CNSC.	August 26
June 20 (Laval, Québec)	Groupe ABS Inc. (Portable gauge)	Prohibited one worker from working with portable gauges until the worker was retrained and able to demonstrate safe work practices to CNSC's satisfaction.	August 10
August 18 (Edmonton, Alberta)	WSP Canada Inc. (Portable gauge)	Ceased using portable gauges at one base of operations and placed the radiation devices in secure storage until all items of non-compliance were corrected to the satisfaction of the CNSC.	September 28
August 18 (Kelowna, British Columbia)	Arthon Industries Ltd. (Portable gauge)	Ceased use of all radiation devices and placed them in secure storage until all workers who were using the radiation devices have been trained in the transportation of Class 7 dangerous goods, until the licensee's radiation protection program was implemented effectively, and until all non-compliances were corrected to the satisfaction of the CNSC.	November 8
August 18 (Chelmsford, Ontario)	R.M. Belanger Ltd. (Portable gauge)	Removed two individuals from work involving portable gauges until they completed training on the licensee's radiation safety program and demonstrated that they were working in accordance with CNSC regulations. Removed a portable gauge from service until necessary repairs were complete. Corrected all items of non-compliance to the satisfaction of the CNSC.	October 21
August 24 (Lachine, Québec)	Isologic Innovative Radiopharmaceuticals Ltd.	Ceased servicing a cyclotron until an application for a new servicing licence was submitted, and a licence issued by the CNSC.	

Issue date and location	Licensee (subsector)	Licensee response	Closure date
September 15 (Kamloops, British Columbia)	Dawson Construction Ltd. (Portable gauge)	Ceased all use of radiation devices until the implementation of their radiation protection program and correction of non-compliances to the satisfaction of the CNSC.	September 30
September 21 (Grand Cache, Alberta)	Milner Power Inc. (Fixed gauge)	Ceased all vessel entries into confined spaces with radiation devices and ceased performing any work that involved direct handling of the radiation devices until compliant procedures were submitted to and accepted by the CNSC, and the licensee's workers were trained on these procedures.	December 9
October 19 (Meadowbank, Nunavut)	Agnico-Eagle Mines Ltd. (Fixed gauge)	Ceased all vessel entries into confined spaces with radiation devices and ceased performing any work that involved direct handling of the radiation devices until compliant procedures were submitted to and accepted by the CNSC, and the licensee's workers were trained on these procedures.	November 16
October 26 (North Vancouver, British Columbia)	Horizon Engineering Inc. (Portable gauge)	Ceased using all portable gauges and placed these gauges in secure storage until the implementation of the licensee's radiation protection program and correction of all items of non-compliance to the satisfaction of the CNSC.	November 24

Table 7: Administrative monetary penalties issued in 2016

Issue date and location	Licensee or individual	Reason for issuing AMP	Penalty amount	Closure date
February 4 (Aurora, Ontario)	Nasirruddin Engineering Ltd.	Failure to keep radiation exposure to persons as low as reasonably achievable through the implementation of management control over work practices.	\$3,730	May 18
February 24 (Ottawa, Ontario)	City of Ottawa	Failure to ensure that a radiation device was in the proper shielded condition when preparing it for transport and, once aware of that fact, failure to immediately notify the CNSC as required.	\$7,930	March 16
May 2 (Merlin, Ontario)	Nuclear Services Canada	Transporting nuclear substances in a package that did not meet the applicable regulatory requirements.	\$6,460	June 9
September 7 (Vernon, British Columbia)	Hoban Equipment Inc.	Carrying on a prescribed activity – i.e., the use of portable gauges – contrary to the licence issued to the company.	\$10,360	October 3
September 9 (Grand Cache, Alberta)	Milner Power Inc.	Failure to comply with a licence condition for fixed gauge use in relation to entering confined spaces where radiation devices are present.	\$3,970	November 30
September 29 (Onaping, Ontario)	Glencore Canada Corporation	Failure to follow the approved standard operating procedure for a maintenance activity. These actions led to a worker receiving a radiation dose.	\$1,000	October 4
November 18 (Chelmsford, Ontario)	R.M. Belanger Ltd.	Failure to keep exposure to radiation to persons as low as reasonably achievable through implementation of management control over work practices.	\$3,730	November 30
November 23 Kelowna, British Columbia	Interior Health Authority – Kelowna General Hospital	Failure to keep a record of all nuclear substances in their possession.	\$1,000	December 21

Appendix D: List of reported events in 2016

Table 8 includes all reported events by licensees in 2016, categorized using the International Nuclear and Radiological Event Scale (INES) tool.

Table 8: List of reported events in 2016

#	Date	INES rating	Type	Sector	Event summary
2672	January 3	0	Packaging and transport	Medical	A package was delivered to the wrong licensee.
2676	January 7	0	Malfunctioning device	Industrial	A certified exposure device operator was unable to retract the source to the fully shielded position and determined that the source assembly had become disconnected. He was able to return the source to the shielded position.
2677	January 8	0	Missing or found	Academic	A licensee reported the loss of sealed sources when he was unable to account for their exact location.
2678	January 12	0	Damaged device	Industrial	A certified exposure device operator tripped at a doorway while carrying an exposure device causing the device to drop to the ground. This damaged the device's outer casing. The source remained locked in the exposure device and the radiation readings remained normal.
2679	January 6	0	Damaged device	Industrial	An exposure device was being lowered by rope from a scaffold platform and fell approximately 1.5 m to the ground. There was damage to the front of device. The source remained locked in the exposure device and the radiation readings remained normal.
2682	January 15	0	Packaging and transport	Industrial	A vehicle carrying an exposure device was involved in a collision. The device remained secure in the truck with no indication of damage.

#	Date	INES rating	Type	Sector	Event summary
2684	January 19	0	Malfunctioning device	Academic	A worker was unable to remove a survey meter from the gamma checker gauge and the source control crank was difficult to turn. The radiation readings remained normal and the device was removed from service.
2687	January 14	0	Malfunctioning device	Industrial	During a lockout procedure, a worker was unable to completely close the shutter of a radiation device. There was no visible physical damage and no abnormal readings were detected. The device was removed from service until it was repaired.
2688	January 19	0	Malfunctioning device	Industrial	The shutter on a portable gauge was discovered in the open position after being transported for maintenance. There was no radiological exposure as a result of the event.
2690	January 22	0	Packaging and transport	Industrial	During transport, a Type A package containing a cesium-137 source fell through the wooden floor of a trailer. The package sustained some damaged, but the source remained inside the package and was not damaged.
2691	January 20	0	Malfunctioning device	Industrial	The shutter on a portable gauge was discovered in the open position after being transported and transferred for maintenance. There was no radiological exposure as a result of the event.
2693	January 25	0	Packaging and transport	Academic	A package containing nuclear substances was not labelled as containing nuclear substances.

#	Date	INES rating	Type	Sector	Event summary
2694	January 27	0	Spill	Commercial	A spill of a nuclear substance (I-131) occurred during the preparation of radioisotopes. The spill was covered with a steel plate. There was no skin contamination or thyroid intake as a result of this spill.
2695	January 29	0	Spill	Commercial	A vial containing nuclear substances (I-131) cracked upon removal from the package and leaked into the lead pot.
2696	February 2	0	Packaging and transport	Medical	A package containing 370 megabecquerels (MBq) of iodine-131 was delivered to the wrong hospital. The hospital arranged for a courier to deliver the package to the correct location.
2699	January 16	0	Breach of security	Medical	A security guard found a room unlocked and the intrusion alarm unarmed while performing a security sweep. A new housekeeper was not aware of the requirements to arm the system and lock the door after cleaning.
2704	February 8	0	Spill	Medical	A vial was dropped during the preparation of a radiopharmaceutical resulting in a spill (I-131). The spill was contained on a rubber stress mat and was bagged and held for decay. There was no skin contamination as a result of this spill.
2707	February 7	0	Breach of security	Medical	Keys for rooms containing prescribed equipment were reported stolen.

#	Date	INES rating	Type	Sector	Event summary
2712	February 22	0	Packaging and transport	Commercial	A Type A package containing a vial of iodine-131 was delivered to a different hospital than intended. The licensee that received the package held a valid CNSC licence. The package was delivered to correct licensee the next day.
2714	February 27	0	Damaged device	Industrial	The remote control of an exposure device was damaged after coming in contact with very hot surface.
2716	February 29	0	Malfunctioning device	Industrial	A fixed gauge was not indicating that the shutter was closed when the shutter should have been closed. It was determined that the shutter was closed, but the computer communication was malfunctioning.
2718	March 4	0	Damaged device	Industrial	A portable gauge was damaged by a compactor at a construction site.
2728	March 18	0	Malfunctioning device	Industrial	The shutter on a portable gauge was discovered in the open position. The gauge was stored 15 m away from any occupied area. There was no radiological exposure as a result of the event.
2729	February 4	0	Breach of security	Academic	An unauthorized person was working in dedicated radiation zone.
2730	March 3	0	Unplanned exposure	Industrial	An unplanned exposure of a member of the public occurred when they entered an area where radiography work was taking place.
2731	March 24	0	Malfunctioning device	Industrial	The shutter on a portable gauge was discovered in the open position after being transported and transferred following maintenance.

#	Date	INES rating	Type	Sector	Event summary
2732	March 22	0	Damaged device	Industrial	An exposure device was being transported on top of a wheeled toolbox and fell approximately 1 m to the ground. There was no visible damage to the device. The device was sent for maintenance and was confirmed to be undamaged.
2735	March 30	0	Packaging and transport	Medical	A package containing a sealed source was reported as having a higher dose rate than expected for the source contained inside, although the dose rate measured on the package remained within the regulatory limits. It was determined that the source was not fully inserted into the shielded position.
2736	February 29	0	Damaged device	Industrial	An exposure device fell to the ground while being lowered from scaffolding. Some external damage to the device was reported. Leak test results were negative.
2740	April 4	0	Damaged device	Industrial	An exposure device fell approximately 1.3 m to the ground from scaffolding. Leak tests were negative.
2742	April 29	0	Packaging and transport	Medical	A package containing therapeutic iodine-131 was delivered to the wrong licensee. The package was picked up and delivered by the carrier to the correct recipient on the same day.
2746	January 13	0	Malfunctioning device	Industrial	A shutter on a fixed gauge was reported as being stuck due to corrosion. The service provider repaired the gauge in place and a protection over the gauge was installed to prevent recurrence.

#	Date	INES rating	Type	Sector	Event summary
2747	March 18	0	Spill	Medical	A spill of a nuclear substance (Tc-99m) occurred during the manipulation of a vial of a medical isotope. There was no skin contamination as a result.
2748	April 4	0	Packaging and transport	Industrial	A Type A package was damaged during transport. The device inside was not damaged.
2749	April 19	0	Unplanned exposure	Industrial	An unplanned exposure to a member of the public occurred when they entered an area where radiography work was taking place.
2751	April 21	0	Spill	Medical	A spill of a nuclear substance (Tc-99m) occurred in a microwave in a designated laboratory. There was no skin contamination as a result of this event.
2757	May 8	0	Malfunctioning device	Industrial	Shutters on three fixed gauges were stuck in the open position. The devices were kept in the normal operating locations to prevent exposure to persons. The three devices underwent maintenance to fix the shutters.
2758	May 9	0	Packaging and transport	Commercial	A package was delivered to the wrong licensee. The package contained a rubidium/strontium-82 generator. The package was picked up and delivered by the carrier to the correct recipient on the same day.
2759	May 12	0	Malfunctioning device	Industrial	The shutter and shutter handle on a fixed gauge was not operating properly. The handle was repaired.
2760	May 23	0	Missing or found	Industrial	A vehicle containing a portable gauge was reported stolen. The vehicle and portable gauge were recovered.

#	Date	INES rating	Type	Sector	Event summary
2762	May 30	0	Damaged device	Industrial	The guide tube of an exposure device was damaged when a pipe fell on it. The source was successfully retracted into the shielded position within the exposure device.
2764	June 7	0	Unplanned exposure	Industrial	An unplanned exposure to a member of the public occurred when they entered an area where radiography work was taking place.
2766	June 17	0	Damaged device	Industrial	A portable gauge was damaged when hit by the drill rod and scraper plate. A leak test was performed and the results were negative.
2769	Jun 15	0	Missing or found	Medical	A therapeutic dose of iodine-131 was reported as missing following delivery.
2770	June 17	0	Damaged device	Academic	A radiation device was hit by a crane. A leak test was performed and the results were negative.
2771	June 21	0	Spill	Commercial	A spill of a nuclear substance (In-111) occurred when a worker was disposing of analytical samples in a designated area. There were no measurable dose rates as a result of the incident.
2775	June 28	0	Missing or found	Industrial	A dew pointer was found in a load of scrap metal.
2776	June 1	0	Packaging and transport	Industrial	A radiation device was reported as lost during transport. The device was located by the carrier a week later.
2777	June 25	0	Packaging and transport	Commercial	The external cardboard package of a shipment was damaged by water. There was no damage to the internal packaging and no leaks or external contamination were detected.

#	Date	INES rating	Type	Sector	Event summary
2779	June 23	0	Packaging and transport	Commercial	A package was forgotten in the parking lot of a hospital by a driver. The licensee sent someone to retrieve the package from the parking lot.
2780	July 6	0	Damaged device	Industrial	A portable gauge was damaged when run over by a vehicle at a construction site. The handle broke, but the source was able to be retracted to the shielded position.
2781	June 27	0	Packaging and transport	Academic	A package was reported as contaminated above the regulatory limit for external contamination.
2782	July 14	0	Spill	Commercial	A spill of a nuclear substance (Tc-99m) occurred during the preparation of radioisotopes. The floor where the spill occurred was decontaminated.
2784	July 12	0	Damaged device	Industrial	A portable gauge was damaged when hit by an excavator. The handle was bent. A leak test was performed and the results were negative.
2786	July 19	0	Unplanned exposure	Industrial	A worker entered a vessel to perform maintenance work while the fixed gauges mounted on the vessel were still in the open position. The worker received a dose below the effective dose limit for members of the public.
2787	July 21	0	Damaged device	Industrial	A portable gauge was damaged when it fell off the back of a truck. The sources remained secured within device. A leak test was performed and the results were negative.
2791	July 24	0	Packaging and transport	Industrial	A vehicle transporting a portable gauge was involved in a collision. There was no visible damage to the package or gauge, and the radiation readings remained normal.

#	Date	INES rating	Type	Sector	Event summary
2792	July 25	0	Packaging and transport	Industrial	A vehicle transporting a portable gauge was involved in a collision. There was no visible damage to the package or gauge, and the radiation readings remained normal.
2793	August 3	0	Missing or found	Industrial	A licensee reported the loss of an exposure device while transporting it to a job site. The exposure device was recovered the following day.
2795	July 15	0	Packaging and transport	Industrial	A portable gauge was misplaced during transport. The carrier later found the package and delivered it to the consignee.
2796	July 29	0	Packaging and transport	Commercial	Two Type A packages were misplaced during transport. The carrier found the packages in a warehouse.
2797	July 19	0	Damaged device	Industrial	A portable gauge was damaged when hit by an excavator on a construction site. The source rod was damaged but could be retracted into the shielded position. The licensee made arrangements for the disposal of the device.
2802	July 8	0	Packaging and transport	Industrial	A vehicle carrying an exposure device was involved in a collision. There was no damage to the exposure device. A leak test was performed and the results were negative.
2807	August 18	0	Unplanned exposure	Commercial	A nuclear energy worker (NEW) was exposed to iodine-131 as a result of a needle stick.
2810	August 17	0	Packaging and transport	Academic	A package sustained minor damage during transport. The external cardboard packaging was damaged. The inner components were not damaged. The licensee repacked them in another box.

#	Date	INES rating	Type	Sector	Event summary
2811	August 19	0	Damaged device	Industrial	A fixed gauge was reported as damaged. The licensee confirmed that radiation readings remained normal.
2812	August 22	0	Spill	Commercial	A spill of a nuclear substance (Tc-99m) occurred during the preparation of radiopharmaceuticals.
2813	August 15	0	Malfunctioning device	Industrial	The shutter on a portable gauge was stuck in the open position. The shutter operated normally after being cleaned.
2816	August 25	0	Packaging and transport	Commercial	A package was delivered to the incorrect location. Arrangements were made with the carrier to deliver it to the correct location.
2823	September 6	0	Missing or found	Industrial	A portable gauge was stolen from a construction site. The police were notified and the portable gauge was recovered.
2824	September 8	0	Packaging and transport	Academic	A package was damaged during transport. There was no contamination or leakage as a result of this event.
2826	September 9	0	Spill	Medical	A spill of a nuclear substance (F-18) occurred when a technician was administering a nuclear medicine dose to a patient. The technician's skin was contaminated. The dose received was below the regulatory limit.
2827	August 30	0	Damaged device	Industrial	A portable gauge was damaged at a construction site. A leak test was performed and the results were negative.
2830	September 8	0	Packaging and transport	Commercial	A package was damaged as a result of heavy rain. There was no contamination or leakage as a result of this event.

#	Date	INES rating	Type	Sector	Event summary
2834	September 10	0	Malfunctioning device	Industrial	The source in an exposure device failed to return to the shielded position. A source recovery operation was performed and the source was returned to the fully shielded position.
2836	August 24	0	Packaging and transport	Industrial	A vehicle transporting a portable gauge was involved in a collision. There was no damage to the device or its package.
2838	September 9	0	Malfunctioning device	Industrial	The shutter on a fixed gauge was not closing. Since the device could not be repaired, the licensee made arrangements for its disposal.
2839	September 16	0	Spill	Medical	A spill of a nuclear substance (Tc-99m) occurred while administering a nuclear medicine dose. The NEW received a dose to the skin below regulatory limits as a result of the incident.
2840	September 9	0	Spill	Medical	A spill of a nuclear substance (F-18) occurred when a technician was administering a nuclear medicine dose. The technician received a dose to the skin that was below the regulatory limits.
2841	September 14	0	Spill	Commercial	A spill of a nuclear substance (I-131) occurred during the preparation of radiopharmaceuticals. There was no skin contamination or thyroid uptake as a result of the incident.
2842	September 15	0	Damaged device	Industrial	A worker noticed that a portable gauge had minor damage. The device was removed from use and a leak test performed. The results were negative.
2843	August 22	0	Unplanned exposure	Medical	Workers accessed the roof of a linear accelerator bunker while the device was in operation.

#	Date	INES rating	Type	Sector	Event summary
2844	September 20	0	Packaging and transport	Commercial	A package sustained minor damaged during transport. The material was repacked and shipped back to the consignor.
2845	September 23	0	Damaged device	Industrial	A portable gauge was damaged at a construction site. There was no contamination or leakage as a result of this event.
2846	September 20	0	Packaging and transport	Industrial	A vehicle transporting a portable gauge was involved in a collision. The package and gauge were undamaged. There was no contamination or leakage as a result of this event.
2848	May 15	0	Damaged device	Industrial	A portable gauge was damaged at a construction site. There was no contamination or leakage as a result of this event.
2850	September 22	0	Damaged device	Industrial	A portable gauge was damaged at a construction site. There was no contamination or leakage as a result of this event.
2852	September 19	0	Worker injured	Industrial	A portable gauge worker was at a job site preparing to use the portable gauge when his truck was hit by a construction vehicle. The worker was injured and taken to hospital. The device fell to the ground, but was not damaged.
2854	September 15	0	Damaged device	Industrial	An exposure device was dropped 18 m. The device was taken out of service and was inspected by a servicing company.
2856	September 27	0	Damaged device	Industrial	A portable gauge was damaged at a construction site. There was no contamination or leakage as a result of this event.

#	Date	INES rating	Type	Sector	Event summary
2857	September 27	0	Spill	Medical	A spill of a nuclear substance (Y-90) occurred during the administration of a nuclear medicine therapy. The spill was contained and the contaminated working materials and personal protective equipment were isolated.
2859	September 29	0	Breach of security	Industrial	A break-in occurred at a portable gauge licensee. However, the storage bunker where the gauges were located was not tampered with. No devices were stolen.
2860	September 22	0	Unplanned exposure	Industrial	An unplanned exposure to a member of the public occurred when they entered an area where radiography work was taking place.
2861	September 23	0	Packaging and transport	Industrial	A vehicle transporting a portable gauge was involved in a collision. The device was not damaged.
2862	September 29	0	Packaging and transport	Commercial	A vial of fluorine-18 was broken upon receipt of a package. The contents were contained in a lead pot. There was no external contamination or leakage as a result of this event.
2864	September 30	0	Spill	Medical	A nuclear substance (F-18) spilled into its lead pot during transport through the nuclear medicine department. There was no contamination or leakage outside the lead pot.
2866	October 4	0	Missing or found	Industrial	A car transporting a portable gauge was reported as missing. It was determined that the car had been towed to a city impound lot. The device and car were recovered.
2867	October 4	1	Missing or found	Industrial	A portable gauge was stolen from a car parked at a private residence. The device has not been recovered.

#	Date	INES rating	Type	Sector	Event summary
2868	October 4	0	Packaging and transport	Medical	A vehicle carrying medical isotopes was involved in a collision. There was no damage to the package. There was no contamination or leakage as a result of this event.
2869	October 4	0	Missing or found	Commercial	A piece of metal with a radiation warning sign was discovered at a scrap metal facility.
2878	September 26	0	Unplanned exposure	Commercial	A NEW received a needle stick and was potentially exposed to fluorine-18. The resulting dose was below the regulatory limits.
2879	October 13	0	Malfunctioning device	Industrial	The shutter on a fixed gauge would not close. A contractor was brought in to remove the gauge from its location and to service it.
2880	October 18	0	Spill	Medical	A spill of a nuclear substance (Tc-99m) occurred during the preparation of a nuclear medicine dose. The technician's skin was contaminated and the dose received was below the regulatory limits.
2881	October 20	0	Unplanned exposure	Commercial	A NEW received skin contamination by technetium-99m. The estimated dose was determined to be below the regulatory limits.
2882	October 10	0	Malfunctioning device	Industrial	The source of a fixed gauge could not be retracted into the shielded position. The radiation readings remained normal
2883	October 21	0	Missing or found	Academic	A nickel-63 sealed source was discovered missing from a gas chromatograph. The source was recovered.

#	Date	INES rating	Type	Sector	Event summary
2885	October 21	0	Packaging and transport	Industrial	A portable gauge, in its Type A package, fell off the back of a vehicle at a construction site. The package was damaged, but the device was not. The radiation readings remained normal as a result of this incident.
2886	October 24	0	Spill	Commercial	A spill of a nuclear substance (Sr-82) occurred when a waste container overflowed. The contaminated laboratory equipment was removed and placed in storage for decay. There was no personnel contamination as a result of the incident.
2892	October 24	0	Packaging and transport	Academic	A package containing 163 MBq of lutetium-177 was shipped as an excepted package, empty package instead of as a Type A package. The package used was a Type A package.
2896	October 27	0	Packaging and transport	Industrial	A vehicle transporting an exposure device was involved in a collision. There was no damage to the device as a result of this incident.
2898	November 3	0	Packaging and transport	Commercial	A package containing medical isotopes was lost during transport. It was recovered later in the day and delivered the following day.
2627	November 10	0	Missing or found	Industrial	A portable gauge that was stolen on November 7, 2015 was recovered.
2899	October 26	0	Packaging and transport	Academic	A package containing phosphorus-32 had substantial damage to the bottom of the package. The lead pot inside the package was intact. There was no contamination or leakage as a result of this event.
2901	November 1	0	Malfunctioning device	Industrial	A portable gauge with an open shutter was found in a storage area. The licensee was able to close the shutter.

#	Date	INES rating	Type	Sector	Event summary
2906	November 8	0	Unplanned exposure	Industrial	Two contractors entered a vessel while the fixed gauges mounted on the vessel were still in the open position. The estimated dose received was below regulatory limits.
2907	November 16	0	Spill	Commercial	A spill of a nuclear substance (Tc-99m) occurred when a vial broke during the manufacturing of medical isotopes. The area where the spill occurred was identified and access was restricted.
2909	November 16	0	Damaged device	Industrial	A portable gauge was damaged at construction site. There was no contamination or leakage and the radiation readings remained normal as a result of this event.
2911	November 23	0	Packaging and transport	Industrial	A vehicle transporting a portable gauge was involved in a collision. There was no damage to the device or its package.
2913	November 25	0	Packaging and transport	Medical	Packages containing medical isotopes were found with external contamination above the regulatory limit.
2915	November 28	0	Packaging and transport	Industrial	A vehicle transporting a portable gauge was involved in a collision. There was no damage to the device or its package.
2918	November 30	0	Spill	Commercial	A spill of a nuclear substance (I-131) occurred during the manufacture of medical isotopes and limited to the vented, shielded glove box.
2919	December 1	0	Packaging and transport	Industrial	A vehicle transporting a portable gauge was involved in a collision. There was no damage to the device or its package.

#	Date	INES rating	Type	Sector	Event summary
2920	October 28	2	Spill	Medical	A spill of a nuclear substance (Y-90) occurred during the administration of a nuclear medicine therapy. The incident resulted in skin contamination of the technician with an estimated dose above the regulatory limit.
2921	December 2	1	Missing or found	Industrial	A portable gauge was stolen from a truck parked outside a private residence. The device has not been recovered.
2922	November 16	0	Unplanned exposure	Industrial	An unplanned exposure occurred when a welder was present in an area where industrial radiography was being conducted. The individual received a dose that was below regulatory limits.
2925	December 21	0	Missing or found	Medical	A Category 5 source (i.e., a cancer seed) was reported as lost.
2926	December 8	0	Packaging and transport	Commercial	Two packages were reported as lost during transport. The packages were located by the carrier four days later.
2928	December 7	0	Damaged device	Industrial	A damaged exposure device was found in a storage area. Radiation readings remained normal. The device was removed from service and sent for maintenance.
2929	December 1	0	Breach of security	Medical	An access card for a high-level laboratory area was found in a public washroom. The security staff for the facility disabled the card.
2932	December 9	0	Damaged source	Medical	A radiotherapy seed was cut in half during preparation of tissue sample. No contamination resulted from the incident.

#	Date	INES rating	Type	Sector	Event summary
2933	December 10	0	Unplanned exposure	Industrial	An unplanned exposure occurred when a worker performing maintenance work entered a vessel mounted with fixed gauges while they were in the open position. The dose received was below regulatory limits.
2937	December 4	0	Malfunctioning device	Industrial	The shutter on a fixed gauge was not working properly. The gauge was sent for repair.
2938	December 20	0	Malfunctioning device	Industrial	The shutter on a fixed gauge was not working properly. The shutter was cleaned and repaired.
2941	December 15	0	Packaging and transport	Industrial	A vehicle transporting a portable gauge was involved in a collision. There was no damage to the device or its package.
2942	December 21	0	Spill	Commercial	A spill of a nuclear substance (F-18) occurred within a lab resulting in skin contamination of a worker. The laboratory was closed and isolated, and the worker was decontaminated.
2943	October 23	0	Packaging and transport	Industrial	A vehicle transporting a portable gauge was involved in a collision. There was no damage to the device or its package.
2944	December 22	0	Packaging and transport	Commercial	A vehicle transporting medical isotopes was involved in a collision. The packages being transported were not damaged as a result of the incident.
2981	December 21	0	Packaging and transport	Industrial	A vehicle transporting an exposure device was involved in a collision. The device was not damaged as a result of the incident.
3050	February 21	0	Packaging and transport	Commercial	A Type A package containing medical isotopes was damaged during transport. Since the damage was minor, and there was no leakage, the package was allowed to continue in transport.

Appendix E: Inspections conducted in 2016

Note: Many inspections for Class II facilities are of consolidated licences. These are shown only once in the table.

Table 9: Inspections conducted in 2016

Inspection date	Licensee name	City	Province	Inspection type	Sector
4-Jan-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
5-Jan-16	Echo NDE Inc.	Red Deer	AB	Type II	Industrial
5-Jan-16	Mistras Services Inc.	Lévis	QC	Type II	Industrial
5-Jan-16	The Scarborough Hospital	Scarborough	ON	Type II	Medical
5-Jan-16	The Scarborough Hospital	Scarborough	ON	Type II	Medical
5-Jan-16	The Scarborough Hospital	Scarborough	ON	Type II	Medical
5-Jan-16	The Scarborough Hospital	Scarborough	ON	Type II	Medical
6-Jan-16	2345171 Ontario Inc.	Guelph	ON	Type II	Medical
6-Jan-16	Brant Community Healthcare System	Brantford	ON	Type II	Medical
6-Jan-16	Brant Community Healthcare System	Brantford	ON	Type II	Medical
6-Jan-16	Mistras Services Inc.	Lévis	QC	Type II	Industrial
7-Jan-16	CMT Engineering Inc.	St Clements	ON	Type II	Industrial
7-Jan-16	The Chemours Canada Company	Maitland	ON	Type II	Industrial
7-Jan-16	Welltec Canada Inc.	Stettler	AB	Type II	Industrial
8-Jan-16	ARCADIS Canada Inc.	Richmond Hill	ON	Type II	Industrial
8-Jan-16	ARCADIS Canada Inc.	Richmond Hill	ON	Type II	Industrial
8-Jan-16	Cornwall Community Hospital	Cornwall	ON	Type II	Medical
8-Jan-16	Cornwall Community Hospital	Cornwall	ON	Type II	Medical
8-Jan-16	Lantheus MI Canada, Inc.	Montréal	QC	Type II	Commercial
11-Jan-16	Centre for Probe Development and Commercialization	Hamilton	ON	Type II	Commercial
11-Jan-16	Geolog Solutions Inc.	Red Deer County	AB	Type II	Industrial
11-Jan-16	Inter Medico, Division of	Markham	ON	Type II	Commercial
13-Jan-16	Brampton Nuclear Services	Brampton	ON	Type II	Medical
13-Jan-16	Canadian Tire Corporation, Limited	Toronto	ON	Type II	Commercial
13-Jan-16	Centre de santé et de services sociaux de la Haute-Yamaska	Granby	QC	Type II	Medical
13-Jan-16	Centre de santé et de services sociaux de la Haute-Yamaska	Granby	QC	Type II	Medical
13-Jan-16	Ezeflow Inc.	Granby	QC	Type II	Industrial
13-Jan-16	Ezeflow Inc.	Granby	QC	Type II	Industrial
13-Jan-16	Isologic Innovative Radiopharmaceuticals Ltd.	Lachine	QC	Type II	Commercial

Inspection date	Licensee name	City	Province	Inspection type	Sector
13-Jan-16	Maxxam Analytics International Corporation	Mississauga	ON	Type II	Academic & research
13-Jan-16	Uni-Tech Inspection Services Ltd.	South Glengarry	ON	Type II	Industrial
13-Jan-16	Vale Canada Limited	Copper Cliff	ON	Type II	Industrial
14-Jan-16	Bayer Inc.	Mississauga	ON	Type II	Commercial
14-Jan-16	Buffalo Inspection Services (2005) Inc.	Edmonton	AB	Type II	Industrial
14-Jan-16	Mistras Optimus Inc.	Saint-Lambert	QC	Type II	Industrial
14-Jan-16	Sartell Instrumentation Limited	Mississauga	ON	Type II	Commercial
14-Jan-16	Stuart Hunt & Associates Ltd.	St Albert	AB	Type II	Commercial
15-Jan-16	Centre de santé et de services sociaux Pierre-Boucher	Longueuil	QC	Type II	Medical
15-Jan-16	Mistras Services Inc.	Lévis	QC	Type II	Industrial
18-Jan-16	Bay Cardiac Diagnostic Inc.	Toronto	ON	Type II	Medical
18-Jan-16	Burton Enterprises Inc.	Port Williams	NS	Type II	Industrial
18-Jan-16	Centre de santé et de services sociaux du Coeur-de-l'Île	Montréal	QC	Type II	Medical
18-Jan-16	Centre de santé et de services sociaux du Coeur-de-l'Île	Montréal	QC	Type II	Medical
18-Jan-16	Dr. Melanie Dara Hobbs, P.Eng	Coldbrook	NS	Type II	Industrial
18-Jan-16	Tier 1 Energy Solutions, Inc.	Calgary	AB	Type II	Industrial
19-Jan-16	Atomic NDT Ltd.	Edmonton	AB	Type II	Industrial
19-Jan-16	Buffalo Inspection Services (2005) Inc.	Edmonton	AB	Type II	Industrial
19-Jan-16	Candec Consultants Ltd.	Richmond Hill	ON	Type II	Industrial
19-Jan-16	Custom Fabricators & Machinists Limited / Fabricants et Mach	Saint John	NB	Type II	Industrial
19-Jan-16	Graham Bros. Construction Limited	Brampton	ON	Type II	Industrial
19-Jan-16	Graham Bros. Construction Limited	Brampton	ON	Type II	Industrial
19-Jan-16	Groupe Qualitas Inc.	Montréal	QC	Type II	Industrial
19-Jan-16	Groupe Vétéri Médic Inc.	Brossard	QC	Type II	Medical
19-Jan-16	Keyera Corp.	Calgary	AB	Type II	Industrial
19-Jan-16	Peterborough Regional Health Centre	Peterborough	ON	Type II	Medical
19-Jan-16	Peterborough Regional Health Centre	Peterborough	ON	Type II	Medical
19-Jan-16	Shaw Pipeline Services Ltd.	Sherwood Park	AB	Type II	Industrial
19-Jan-16	The Minute Maid Company Canada Inc/La compagnie minute maid	Peterborough	ON	Type II	Industrial
19-Jan-16	TISI Canada Inc.	Oakville	ON	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
20-Jan-16	Agrium	Fort Saskatchewan	AB	Type II	Industrial
20-Jan-16	Coca-Cola Refreshments Canada Company/	Brampton	ON	Type II	Industrial
20-Jan-16	Englobe Corp.	Laval	QC	Type II	Industrial
20-Jan-16	Englobe Corp.	Laval	QC	Type II	Industrial
20-Jan-16	Kawartha Diagnostic Imaging Ltd.	Peterborough	ON	Type II	Medical
20-Jan-16	Kawartha Diagnostic Imaging Ltd.	Peterborough	ON	Type II	Medical
20-Jan-16	Nortech Advanced N.D.T. Ltd.	Sherwood Park	AB	Type II	Industrial
20-Jan-16	Nova Scotia Health Authority	Halifax	NS	Type II	Commercial
20-Jan-16	Terraspec Engineering Inc.	Peterborough	ON	Type II	Industrial
20-Jan-16	TJ Inspection Services	Dartmouth	NS	Type II	Industrial
21-Jan-16	Acuren Group Inc.	Edmonton	AB	Type II	Industrial
21-Jan-16	Cambium Inc.	Peterborough	ON	Type II	Industrial
21-Jan-16	East Coast Veterinary Group Limited	Dartmouth	NS	Type II	Medical
21-Jan-16	Engtec Consulting Inc.	Vaughan	ON	Type II	Industrial
21-Jan-16	Gamma-Tech Inspection Ltd.	Calgary	AB	Type II	Industrial
21-Jan-16	Gamma-Tech Inspection Ltd.	Calgary	AB	Type II	Industrial
21-Jan-16	Gamma-Tech Inspection Ltd.	Calgary	AB	Type II	Industrial
21-Jan-16	Hôpital Santa Cabrini	Montréal	QC	Type II	Medical
21-Jan-16	Hôpital Santa Cabrini	Montréal	QC	Type II	Medical
21-Jan-16	Hunt Inspection Ltd.	Stettler	AB	Type II	Industrial
21-Jan-16	IRISNDT Corp.	Edmonton	AB	Type II	Industrial
21-Jan-16	J. & P. Leveque Bros. Haulage Ltd.	Bancroft	ON	Type II	Industrial
21-Jan-16	Kingston General Hospital	Kingston	ON	Type I	Medical
21-Jan-16	LEA Consulting Ltd.	Markham	ON	Type II	Industrial
21-Jan-16	Les Inspections Thermetco Inc.	Montréal	QC	Type II	Industrial
21-Jan-16	Northumberland Hills Hospital	Cobourg	ON	Type II	Medical
21-Jan-16	Stuart Hunt & Associates Ltd.	St Albert	AB	Type II	Commercial
21-Jan-16	TJ Inspection Services	Dartmouth	NS	Type II	Industrial
22-Jan-16	Conquest Engineering Ltd.	Saint John	NB	Type II	Industrial
22-Jan-16	Izaak Walton Killam Health Centre	Halifax	NS	Type II	Medical
22-Jan-16	Scanning Technologies Inc.	Sherwood Park	AB	Type II	Industrial
22-Jan-16	Spectrum NDT Ltd.	Calgary	AB	Type II	Industrial
25-Jan-16	Centre hospitalier universitaire de Sherbrooke	Sherbrooke	QC	Type I	Medical
25-Jan-16	GHD Consultants Ltd.	Saint-Laurent	QC	Type II	Industrial
25-Jan-16	GHD Consultants Ltd.	Saint-Laurent	QC	Type II	Industrial
26-Jan-16	Capital Paving Inc.	Guelph	ON	Type II	Industrial
26-Jan-16	K.V. Inspection Services Ltd.	Oakville	ON	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
27-Jan-16	Centre de santé et de services sociaux Pierre-de-Saurel	Sorel	QC	Type II	Medical
27-Jan-16	Centre de santé et de services sociaux Pierre-de-Saurel	Sorel-Tracy	QC	Type II	Medical
27-Jan-16	Englobe Corp.	Laval	QC	Type II	Industrial
27-Jan-16	Honeywell-Measurex Inc.	Lachine	QC	Type II	Commercial
27-Jan-16	K.V. Inspection Services Ltd.	Oakville	ON	Type II	Industrial
27-Jan-16	Sunnybrook Health Sciences Centre	Toronto	ON	Type II	Academic & research
27-Jan-16	Sunnybrook Health Sciences Centre	Toronto	ON	Type II	Academic & research
27-Jan-16	Sunnybrook Health Sciences Centre	Toronto	ON	Type II	Medical
27-Jan-16	Sunnybrook Health Sciences Centre	Toronto	ON	Type II	Medical
27-Jan-16	TISI Canada Inc.	Oakville	ON	Type II	Industrial
28-Jan-16	Labatt Brewing Company Ltd. / La Brasserie Labatt limitée	London	ON	Type II	Industrial
28-Jan-16	Schlumberger Canada Limited	Calgary	AB	Type II	Industrial
28-Jan-16	Siemens Canada Limited	Oakville	ON	Type II	Commercial
28-Jan-16	Sunnybrook Health Sciences Centre	Toronto	ON	Type II	Medical
28-Jan-16	Sunnybrook Health Sciences Centre	Toronto	ON	Type II	Medical
28-Jan-16	Sunnybrook Health Sciences Centre	Toronto	ON	Type II	Medical
29-Jan-16	Kubota Materials Canada Corporation	Orillia	ON	Type II	Industrial
29-Jan-16	Kubota Materials Canada Corporation	Cambridge	ON	Type II	Industrial
1-Feb-16	Atomic NDT Ltd.	Edmonton	AB	Type II	Industrial
1-Feb-16	Valmet Ltée / Valmet Ltd	Ste-Anne-Des-Plaines	QC	Type II	Industrial
1-Feb-16	West End 2425 Nuclear Medicine Inc.	Toronto	ON	Type II	Medical
2-Feb-16	C.B. Non-Destructive Testing Ltd	Oakville	ON	Type II	Industrial
2-Feb-16	Canberra Co.	Concord	ON	Type II	Commercial
2-Feb-16	Canberra Co.	Concord	ON	Type II	Commercial
2-Feb-16	DGI Geoscience Inc.	Barrie	ON	Type II	Industrial
2-Feb-16	Groupe Vétéri Médic Inc.	Brossard	QC	Type II	Medical
2-Feb-16	Innotech Inspection Solutions Ltd.	Sherwood Park	AB	Type II	Industrial
2-Feb-16	Insight Inspections Incorporated	Edmonton	AB	Type II	Industrial
2-Feb-16	Perfection Inspection Limited	Cambridge	ON	Type II	Industrial
2-Feb-16	Thermo Gamma-Metrics LLC	San Diego	CA	Type II	Commercial
2-Feb-16	Trillium Health Partners	Mississauga	ON	Type II	Medical
2-Feb-16	Trillium Health Partners	Mississauga	ON	Type II	Medical

Inspection date	Licensee name	City	Province	Inspection type	Sector
3-Feb-16	CIUSSS de l'Est-de-l'Île-de-Montréal	Montréal	QC	Type II	Medical
3-Feb-16	IRISNDT Corp.	Edmonton	AB	Type II	Industrial
4-Feb-16	Contro Valve Equipment Inc.	Burlington	ON	Type II	Commercial
4-Feb-16	Hôpital Montfort	Ottawa	ON	Type II	Medical
4-Feb-16	Insight Medical Holdings Ltd.	Edmonton	AB	Type II	Medical
4-Feb-16	Northern Alberta Institute of Technology	Edmonton	AB	Type II	Industrial
4-Feb-16	Seymour Pacific Developments Ltd.	Regina	SK	Type II	Industrial
4-Feb-16	South Rock Ltd.	Calgary	AB	Type II	Industrial
4-Feb-16	The Graff Company Ltd.	Mississauga	ON	Type II	Industrial
4-Feb-16	TISI Canada Inc.	Oakville	ON	Type II	Industrial
4-Feb-16	Université du Québec à Montréal	Montréal	QC	Type II	Academic & research
4-Feb-16	William Osler Health Centre	Brampton	ON	Type II	Medical
4-Feb-16	William Osler Health Centre	Brampton	ON	Type II	Medical
5-Feb-16	Step Energy Services Ltd.	Red Deer	AB	Type II	Industrial
5-Feb-16	The Ottawa Hospital	Ottawa	ON	Type II	Commercial
5-Feb-16	The Ottawa Hospital	Ottawa	ON	Type II	Commercial
5-Feb-16	The Ottawa Hospital	Ottawa	ON	Type II	Commercial
5-Feb-16	The Ottawa Hospital	Ottawa	ON	Type II	Medical
5-Feb-16	The Ottawa Hospital	Ottawa	ON	Type II	Medical
5-Feb-16	The Ottawa Hospital	Ottawa	ON	Type II	Medical
5-Feb-16	The Ottawa Hospital	Ottawa	ON	Type II	Medical
5-Feb-16	The Ottawa Hospital	Ottawa	ON	Type II	Medical
5-Feb-16	The Ottawa Hospital	Ottawa	ON	Type II	Medical
5-Feb-16	The Ottawa Hospital	Ottawa	ON	Type II	Medical
5-Feb-16	The Ottawa Hospital	Ottawa	ON	Type II	Medical
5-Feb-16	The Ottawa Hospital	Ottawa	ON	Type II	Medical
5-Feb-16	University Health Network	Toronto	ON	Type II	Commercial
8-Feb-16	1788966 Alberta Ltd.	Redcliff	AB	Type II	Industrial
8-Feb-16	IKO Industries Ltd.	Brampton	ON	Type II	Industrial
8-Feb-16	Les Laboratoires d'Essais Mequaltech Inc.	Montréal	QC	Type II	Industrial
8-Feb-16	Mistras Services Inc.	Lévis	QC	Type II	Industrial
8-Feb-16	Seymour Pacific Developments Ltd.	Regina	SK	Type II	Industrial
8-Feb-16	Southern Alberta Institute of Technology	Calgary	AB	Type II	Industrial
8-Feb-16	Steel Inspection & Testing Ltd.	St Catharines	ON	Type II	Industrial
8-Feb-16	Tarkett Inc.	Farnham	QC	Type II	Industrial
9-Feb-16	Canadian Institute for NDE	Hamilton	ON	Type II	Industrial
9-Feb-16	Englobe Corp.	Laval	QC	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
9-Feb-16	Les Laboratoires d'Essais Mequaltech Inc.	Montréal	QC	Type II	Industrial
9-Feb-16	Trenergy Inc.	St Catharines	ON	Type II	Industrial
9-Feb-16	Vancouver Coastal Health Authority	Vancouver	BC	Type II	Medical
10-Feb-16	Cascades Canada ULC	Kingsey Falls	QC	Type II	Industrial
10-Feb-16	Centre hospitalier Ste-Croix	Drummondville	QC	Type II	Medical
10-Feb-16	Centre hospitalier Ste-Croix	Drummondville	QC	Type II	Medical
11-Feb-16	CHU de Québec - Université Laval	Sainte-Foy	QC	Type II	Medical
11-Feb-16	CHU de Québec - Université Laval	Sainte-Foy	QC	Type II	Medical
11-Feb-16	CHU de Québec - Université Laval	Ste-Foy	QC	Type II	Medical
11-Feb-16	CHU de Québec - Université Laval	Ste-Foy	QC	Type II	Medical
11-Feb-16	Di-Med Services Limited	Vaughan	ON	Type II	Medical
11-Feb-16	Englobe Corp.	Laval	QC	Type II	Industrial
11-Feb-16	Nuclear Services Canada Inc.	Merlin	ON	Type II	Commercial
11-Feb-16	Unique Detection Services Ltd.	Cambridge	ON	Type II	Industrial
11-Feb-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
12-Feb-16	CHU de Québec - Université Laval	Sainte-Foy	QC	Type II	Medical
12-Feb-16	CHU de Québec - Université Laval	Sainte-Foy	QC	Type II	Medical
12-Feb-16	CHU de Québec - Université Laval	Sainte-Foy	QC	Type II	Medical
12-Feb-16	CHU de Québec - Université Laval	Ste-Foy	QC	Type II	Medical
12-Feb-16	CHU de Québec - Université Laval	Ste-Foy	QC	Type II	Medical
12-Feb-16	CHU de Québec - Université Laval	Ste-Foy	QC	Type II	Medical
12-Feb-16	GeoTerre Limited	Brampton	ON	Type II	Industrial
15-Feb-16	GeoNorth Engineering Ltd.	Prince George	BC	Type II	Industrial
15-Feb-16	St-Isidore Asphalte Ltée	St-Isidore	NB	Type II	Industrial
16-Feb-16	1583023 Alberta Ltd.	St. Albert	AB	Type II	Industrial
16-Feb-16	Beauty Packaging Canada, Inc.	Brampton	ON	Type II	Industrial
16-Feb-16	McElhanney Consulting Services Ltd.	Courtenay	BC	Type II	Industrial
16-Feb-16	Mills Memorial Hospital	Terrace	BC	Type II	Medical
16-Feb-16	Mills Memorial Hospital	Terrace	BC	Type II	Medical
16-Feb-16	NDC Infrared Engineering, Inc.	Irwindale	CA	Type II	Commercial
16-Feb-16	Ontario Power Generation Inc.	Whitby	ON	Type II	Industrial
16-Feb-16	RTD Quality Services Inc.	Burlington	ON	Type II	Industrial
16-Feb-16	St. Michael's Hospital	Toronto	ON	Type II	Academic & research
16-Feb-16	St. Michael's Hospital	Toronto	ON	Type II	Academic & research
16-Feb-16	St. Michael's Hospital	Toronto	ON	Type II	Medical
16-Feb-16	St. Michael's Hospital	Toronto	ON	Type II	Medical
16-Feb-16	St. Michael's Hospital	Toronto	ON	Type II	Medical
16-Feb-16	St. Michael's Hospital	Toronto	ON	Type II	Medical

Inspection date	Licensee name	City	Province	Inspection type	Sector
16-Feb-16	Trenergy Inc.	St Catharines	ON	Type II	Industrial
16-Feb-16	Trevali Mining (New Brunswick) Ltd.	Bathurst	NB	Type II	Industrial
17-Feb-16	Agrium	Fort Saskatchewan	AB	Type II	Industrial
17-Feb-16	Canada Border Services Agency	Ottawa	ON	Type II	Industrial
17-Feb-16	Civil ArSa Engineering Inc.	Innisfil	ON	Type II	Industrial
17-Feb-16	Coco Paving (1990) Inc.	North York	ON	Type II	Industrial
17-Feb-16	Héma-Québec	Saint-Laurent	QC	Type II	Medical
17-Feb-16	Le Groupe Roy Consultants Ltee	Bathurst	NB	Type II	Industrial
17-Feb-16	Peto MacCallum Ltd.	Kitchener	ON	Type II	Industrial
17-Feb-16	PML Inspection Services Ltd.	Fort Saskatchewan	AB	Type II	Industrial
17-Feb-16	Stantec Consulting Ltd.	Barrie	ON	Type II	Industrial
18-Feb-16	Aim Recycling Bathurst	Bathurst	NB	Type II	Industrial
18-Feb-16	Delwisch Developments Ltd.	Smithers	BC	Type II	Industrial
18-Feb-16	Ground Engineering & Materials Consultants Ltd.	Fredericton	NB	Type II	Industrial
18-Feb-16	Ground Engineering & Materials Consultants Ltd.	Fredericton	NB	Type II	Industrial
18-Feb-16	McElhanney Consulting Services Ltd.	Courtenay	BC	Type II	Industrial
18-Feb-16	Ontario Power Generation Inc.	Whitby	ON	Type II	Industrial
18-Feb-16	Régie régionale de la santé A	Bathurst	NB	Type II	Medical
18-Feb-16	Regional Health Authority A	Bathurst	NB	Type II	Medical
18-Feb-16	Sarafinchin Associates Ltd.	Toronto	ON	Type II	Industrial
18-Feb-16	University of Alberta	Edmonton	AB	Type II	Commercial
19-Feb-16	Acuren Group Inc.	Edmonton	AB	Type II	Industrial
19-Feb-16	Medical Imaging Consultants	Edmonton	AB	Type II	Medical
19-Feb-16	Riverview Animal Hospital	Riverview	NB	Type II	Medical
22-Feb-16	Englobe Corp.	Laval	QC	Type II	Industrial
22-Feb-16	Labo S.M. Inc.	Longueuil	QC	Type II	Industrial
22-Feb-16	Les Tricots Duval & Raymond Ltée	Princeville	QC	Type II	Industrial
22-Feb-16	Maskimo Construction Inc.	Trois-Rivières	QC	Type II	Industrial
23-Feb-16	1388020 Ontario Corp.	Toronto	ON	Type II	Medical
23-Feb-16	Acuren Group Inc.	Edmonton	AB	Type II	Industrial
23-Feb-16	Bonnett's Energy Services Ltd.	Red Deer	AB	Type II	Industrial
23-Feb-16	Cégep Limoilou	Québec	QC	Type II	Industrial
23-Feb-16	Centre de santé et de services sociaux D'Arthabaska-Érable	Victoriaville	QC	Type II	Medical
23-Feb-16	Centre de santé et de services sociaux D'Arthabaska-Érable	Victoriaville	QC	Type II	Medical
23-Feb-16	GHD Consultants Ltd.	Saint-Laurent	QC	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
23-Feb-16	GHD Consultants Ltd.	Saint-Laurent	QC	Type II	Industrial
23-Feb-16	Humber River Hospital	Toronto	ON	Type II	Medical
23-Feb-16	Humber River Hospital	Toronto	ON	Type II	Medical
23-Feb-16	InVentiv Health Clinique Inc.	Québec	QC	Type II	Academic & research
23-Feb-16	Louis W. Bray Construction Limited	St Andrews West	ON	Type II	Industrial
23-Feb-16	Loyalist College of Applied Arts and Technology	Belleville	ON	Type II	Industrial
23-Feb-16	Vétoquinol North America Inc.	Belleville	ON	Type II	Academic & research
24-Feb-16	Avizo Experts-Conseils Inc.	Sherbrooke	QC	Type II	Industrial
24-Feb-16	Blue Mountain Wallcoverings Inc.	Sherbrooke	QC	Type II	Industrial
24-Feb-16	Certified Testing Systems (2009) Inc.	Kitchener	ON	Type II	Industrial
24-Feb-16	EXP Services Inc.	Laval	QC	Type II	Industrial
24-Feb-16	Honeywell Limited/Honeywell Limitée	Mississauga	ON	Type II	Commercial
24-Feb-16	Institut universitaire en santé mentale de Québec	Québec	QC	Type II	Academic & research
24-Feb-16	SGS Canada Inc.	Lakefield	ON	Type II	Industrial
24-Feb-16	SGS Canada Inc.	Lakefield	ON	Type II	Industrial
25-Feb-16	Construction DJL Inc./	Boucherville	QC	Type II	Industrial
25-Feb-16	Lantheus MI Canada, Inc.	Montréal	QC	Type II	Commercial
25-Feb-16	Les Laboratoires d'Essais Mequaltech Inc.	Montréal	QC	Type II	Industrial
25-Feb-16	Sintra Inc.	Montréal	QC	Type II	Industrial
26-Feb-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler Amériques Limitée	Lloydminster	AB	Type II	Industrial
26-Feb-16	Construction Testing Asphalt Lab Ltd.	Cambridge	ON	Type II	Industrial
26-Feb-16	Isologic Innovative Radiopharmaceuticals of Ontario Ltd.	Ottawa	ON	Type II	Commercial
26-Feb-16	Isologic Innovative Radiopharmaceuticals of Ontario Ltd.	Ottawa	ON	Type II	Commercial
29-Feb-16	Canadian Nuclear Laboratories Ltd.	Chalk River	ON	Type II	Academic & research
29-Feb-16	Canadian Nuclear Laboratories Ltd.	Chalk River	ON	Type II	Academic & research
29-Feb-16	Centre Hospitalier Universitaire de Québec	Quebec	QC	Type II	Academic & research
29-Feb-16	R-Metrics Ltd.	Burlington	ON	Type II	Commercial
1-Mar-16	Perfection Inspection Limited	Cambridge	ON	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
1-Mar-16	Perfection Inspection Limited	Cambridge	ON	Type II	Industrial
1-Mar-16	Université Laval	Quebec	QC	Type II	Academic & research
1-Mar-16	Windsor Regional Hospital	Windsor	ON	Type I	Medical
2-Mar-16	Certified Testing Systems (2009) Inc.	Kitchener	ON	Type II	Industrial
2-Mar-16	Certified Testing Systems (2009) Inc.	Kitchener	ON	Type II	Commercial
3-Mar-16	Acuren Group Inc.	Brossard	QC	Type II	Industrial
3-Mar-16	Big Guns Energy Services Inc.	Calgary	AB	Type II	Industrial
3-Mar-16	Fisher Scientific Company	Ottawa	ON	Type II	Commercial
3-Mar-16	McGill University Health Centre	Montreal	ON	Type II	Medical
3-Mar-16	Nuclear Services Canada Inc.	Merlin	ON	Type II	Commercial
3-Mar-16	Voltage Wireline Inc.	Blackfalds	AB	Type II	Industrial
4-Mar-16	General Dynamics Produits de defense et Systemes Tactiques - Canada Inc.	Le Gardeur	QC	Type II	Industrial
7-Mar-16	Arbutus Biopharma Corporation	Burnaby	BC	Type II	Academic & research
8-Mar-16	A & A Concrete X-Ray and Coring Ltd.	Langley	BC	Type II	Industrial
8-Mar-16	Custom Fabricators & Machinists Limited / Fabricants et Mach	Saint John	NB	Type II	Industrial
8-Mar-16	Custom Fabricators & Machinists Limited / Fabricants et Mach	Saint John	NB	Type II	Industrial
8-Mar-16	Honeywell Ltd	Lachine	QC	Type II	Commercial
8-Mar-16	Jubilant DraxImage Inc.	Kirkland	QC	Type II	Commercial
8-Mar-16	Lafarge Canada Inc.	Richmond	BC	Type II	Industrial
8-Mar-16	Law Engineering (London) Inc.	London	ON	Type II	Industrial
8-Mar-16	RTD Quality Services Inc.	Burlington	ON	Type II	Industrial
8-Mar-16	RTD Quality Services Inc.	Burlington	ON	Type II	Industrial
8-Mar-16	St. Joseph's Health Care, London	London	ON	Type II	Medical
8-Mar-16	Taghleef Industries Canada Inc.	Varennes	QC	Type II	Industrial
9-Mar-16	Acuren Group Inc.	Edmonton	AB	Type II	Industrial
9-Mar-16	Acuren Group Inc.	Edmonton	AB	Type II	Industrial
9-Mar-16	Coco Paving (1990) Inc.	North York	ON	Type II	Industrial
9-Mar-16	Gerdau AmeriSteel Corporation	Whitby	ON	Type II	Industrial
9-Mar-16	Les Laboratoires d'Essais Mequaltech Inc.	Montréal	QC	Type II	Industrial
9-Mar-16	Vancouver Coastal Health Authority	Vancouver	BC	Type II	Medical
10-Mar-16	Acuren Group Inc.	Edmonton	AB	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
10-Mar-16	Cargill Limited	Clavet	SK	Type II	Industrial
10-Mar-16	Englobe Corp.	Laval	QC	Type II	Industrial
10-Mar-16	Government of Newfoundland & Labrador	St.John's	NL	Type II	Industrial
10-Mar-16	PML Inspection Services Ltd.	Fort Saskatchewan	AB	Type II	Industrial
10-Mar-16	Premier Diagnostic Center (Vancouver) Inc.	Burnaby	BC	Type II	Medical
11-Mar-16	Les Laboratoires d'Essais Mequaltech Inc.	Montréal	QC	Type II	Industrial
11-Mar-16	Tomlinson Enterprises Ltd.	Sarnia	ON	Type II	Industrial
14-Mar-16	Baker Hughes Canada Company	Leduc	AB	Type II	Industrial
14-Mar-16	Baker Hughes Canada Company	Leduc	AB	Type II	Industrial
14-Mar-16	Bot Construction Limited	Oakville	ON	Type II	Industrial
14-Mar-16	Coca-Cola Refreshments Canada Company/	Brampton	ON	Type II	Industrial
14-Mar-16	MyHealth Partners Inc.	Toronto	ON	Type II	Medical
14-Mar-16	Orbit Engineering Limited	Brampton	ON	Type II	Industrial
14-Mar-16	Peto MacCallum Ltd.	Kitchener	ON	Type II	Industrial
14-Mar-16	Toronto Cardiology Associates Inc.	Toronto	ON	Type II	Medical
15-Mar-16	Canadian Inspection Ltd.	Edmonton	AB	Type II	Industrial
15-Mar-16	Pine Environmental Services Inc.	Mississauga	ON	Type II	Commercial
16-Mar-16	CEGEP de Trois-Rivières	Trois-Rivières	QC	Type II	Industrial
16-Mar-16	Labatt Brewing Company Ltd. / La Brasserie Labatt limitée	London	ON	Type II	Industrial
17-Mar-16	Woodstock General Hospital	Woodstock	ON	Type II	Medical
18-Mar-16	Nuclear Services Canada Inc.	Merlin	ON	Type II	Commercial
21-Mar-16	Hamilton Health Sciences Corporation/St. Joseph's Health System	Hamilton	ON	Type I	Medical
22-Mar-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
22-Mar-16	Atlantic Coated Papers Ltd. / Papiers Couchés d'Atlantic Lté	Windsor	QC	Type II	Industrial
22-Mar-16	Couillard Construction Limitée	Coaticook	QC	Type II	Industrial
22-Mar-16	Hamilton Health Sciences Corp.	Hamilton	ON	Type II	Medical
22-Mar-16	Hamilton Health Sciences Corporation	Hamilton	ON	Type II	Medical
22-Mar-16	Qualité N.D.E. Limitée	Mercier	QC	Type II	Commercial
23-Mar-16	Mistras Services Inc.	Lévis	QC	Type II	Industrial
23-Mar-16	The Corporation of the City of Oshawa	Oshawa	ON	Type II	Industrial
23-Mar-16	The Graff Company	Mississauga	ON	Type II	Industrial
23-Mar-16	The Hospital for Sick Children	Toronto	ON	Type II	Academic & research

Inspection date	Licensee name	City	Province	Inspection type	Sector
24-Mar-16	Canadian Tower Scanning Inc.	Sarnia	ON	Type II	Industrial
29-Mar-16	BWXT Canada LTD.	Cambridge	ON	Type II	Industrial
29-Mar-16	Cepsa Chimie Bécancour Inc. / Cepsa Química Bécancour Inc.	Bécancour	QC	Type II	Industrial
29-Mar-16	Unique Detection Services Ltd.	Cambridge	ON	Type II	Industrial
30-Mar-16	Christopher Thompson	Montreal	QC	Type II	Commercial
31-Mar-16	Halton HealthCare Services Corporation	Oakville	ON	Type II	Medical
31-Mar-16	Halton HealthCare Services Corporation	Oakville	ON	Type II	Medical
31-Mar-16	Kodiak Quality Control Ltd.	Oakville	ON	Type II	Commercial
5-Apr-16	Tomlinson Enterprises Ltd.	Sarnia	ON	Type II	Industrial
6-Apr-16	Environment Canada	Burlington	ON	Type II	Academic & research
6-Apr-16	GHD Consultants Ltd.	Saint-Laurent	QC	Type II	Industrial
6-Apr-16	Stern Laboratories Inc.	Hamilton	ON	Type II	Academic & research
7-Apr-16	1051630 Alberta Ltd.	Calgary	AB	Type II	Industrial
7-Apr-16	Canadian Food Inspection Agency	Guelph	ON	Type II	Academic & research
7-Apr-16	Englobe Corp.	Laval	QC	Type II	Industrial
7-Apr-16	MPE Engineering Ltd.	Lethbridge	AB	Type II	Industrial
7-Apr-16	Weatherford Canada Ltd.	Calgary	AB	Type II	Industrial
8-Apr-16	1051630 Alberta Ltd.	Calgary	AB	Type II	Industrial
8-Apr-16	G Tech Earth Sciences Corp.	Magrath	AB	Type II	Industrial
8-Apr-16	Lethbridge College	Lethbridge	AB	Type II	Industrial
12-Apr-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler Amériques Limitée	Lloydminster	AB	Type II	Industrial
12-Apr-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler Amériques Limitée	Lloydminster	AB	Type II	Industrial
12-Apr-16	McIntosh Lalani Engineering Ltd.	Calgary	AB	Type II	Industrial
12-Apr-16	McIntosh Lalani Engineering Ltd.	Calgary	AB	Type II	Industrial
13-Apr-16	Curtis Engineering Associates Ltd.	Calgary	AB	Type II	Industrial
13-Apr-16	Curtis Engineering Associates Ltd.	Calgary	AB	Type II	Industrial
13-Apr-16	Global Engineering & Testing Ltd	Calgary	AB	Type II	Industrial
13-Apr-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
14-Apr-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler Amériques Limitée	Lloydminster	AB	Type II	Industrial
18-Apr-16	Frontop Engineering Limited	Markham	ON	Type II	Industrial
18-Apr-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
25-Apr-16	1051630 Alberta Ltd.	Calgary	AB	Type II	Industrial
26-Apr-16	Coco Paving (1990) Inc.	Tecumseh	ON	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
26-Apr-16	Davroc Testing Laboratories Inc.	Brampton	ON	Type II	Industrial
26-Apr-16	Davroc Testing Laboratories Inc.	Brampton	ON	Type II	Industrial
26-Apr-16	GHD Consultants Ltd.	Montréal	QC	Type II	Industrial
27-Apr-16	J.L. Shepherd and Associates	San Fernando	CA	Type II	Commercial
27-Apr-16	Okanagan-Kootenay	Osoyoos	BC	Type II	Medical
27-Apr-16	Regional Municipality of Durham	Whitby	ON	Type II	Industrial
27-Apr-16	TISI Canada Inc.	Oakville	ON	Type II	Industrial
28-Apr-16	AEP Canada Inc.	West Hill	ON	Type II	Industrial
28-Apr-16	Ecora Engineering Ltd.	Kelowna	BC	Type II	Industrial
28-Apr-16	Kidde Canada Inc.	Vaughan	ON	Type II	Commercial
28-Apr-16	Klößner Pentaplast Company	Montréal	QC	Type II	Industrial
28-Apr-16	Lakeridge Health	Oshawa	ON	Type II	Medical
28-Apr-16	Lakeridge Health	Oshawa	ON	Type II	Medical
28-Apr-16	Omnifission Inc.	Brampton	ON	Type II	Commercial
28-Apr-16	Université Concordia/ Concordia University	Montréal	QC	Type II	Academic & research
29-Apr-16	EXL Engineering Inc.	Delta	BC	Type II	Industrial
29-Apr-16	EXP Services Inc.	Brampton	ON	Type II	Industrial
29-Apr-16	Fletcher Paine Associates Ltd.	Vernon	BC	Type II	Industrial
29-Apr-16	Hunt Inspection Ltd.	Stettler	AB	Type II	Industrial
29-Apr-16	Insite Materials Testing Group Ltd.	Kelowna	BC	Type II	Industrial
29-Apr-16	Interior Testing Services Ltd.	Kelowna	BC	Type II	Industrial
2-May-16	Celanese Eva Performance Polymers Inc.	Edmonton	AB	Type II	Industrial
3-May-16	Acuren Group Inc.	Edmonton	AB	Type II	Industrial
3-May-16	Centre universitaire de santé McGill / McGill University Health Centre	Montréal	QC	Type II	Medical
3-May-16	City of Edmonton, Engineering Services Section	Edmonton	AB	Type II	Industrial
3-May-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
3-May-16	Opus Stewart Weir Ltd.	Sherwood Park	AB	Type II	Industrial
3-May-16	ShawCor Ltd.	Toronto	ON	Type II	Industrial
3-May-16	Stuart Hunt & Associates Ltd.	St Albert	AB	Type II	Commercial
3-May-16	Syncrude Canada Ltd.	Edmonton	AB	Type II	Industrial
3-May-16	Syncrude Canada Ltd.	Edmonton	AB	Type II	Academic & research
4-May-16	Centre universitaire de santé McGill / McGill University Health Centre	Montréal	QC	Type II	Medical
4-May-16	Centre universitaire de santé McGill / McGill University Health Centre	Montréal	QC	Type II	Medical

Inspection date	Licensee name	City	Province	Inspection type	Sector
4-May-16	Centre universitaire de santé McGill / McGill University Health Centre	Montréal	QC	Type II	Medical
4-May-16	PCL Construction Management Inc.	Edmonton	AB	Type II	Industrial
4-May-16	Ready Engineering Corporation	Spruce Grove	AB	Type II	Commercial
4-May-16	Thermo EGS Gauging, Inc.	Wilmington	MA	Type II	Commercial
4-May-16	Thurber Engineering Ltd.	Calgary	AB	Type II	Industrial
4-May-16	Tuboscope Vetco Canada ULC	Nisku	AB	Type II	Industrial
5-May-16	British Columbia Cancer Agency	Surrey	BC	Type I	Medical
5-May-16	Clifton Associates Ltd.	Regina	SK	Type II	Industrial
5-May-16	Omnifission Inc.	Brampton	ON	Type II	Commercial
5-May-16	Regie regional de la santé A	Moncton	NB	Type I	Medical
5-May-16	Regie regional de la santé A	Moncton	NB	Type II	Medical
5-May-16	Regie regional de la santé A	Moncton	NB	Type II	Medical
5-May-16	Rivest Technologies Incorporated	Edmonton	AB	Type II	Industrial
5-May-16	Services New Brunswick	Fredricton	NB	Type II	Commercial
5-May-16	Trillium Beverage Inc.	North York	ON	Type II	Industrial
5-May-16	Windsor Regional Hospital	Windsor	ON	Type II	Medical
5-May-16	Windsor Regional Hospital	Windsor	ON	Type II	Medical
6-May-16	Canada Pump and Power (CPP) Corporation	Ardrossan	AB	Type II	Industrial
6-May-16	Centre universitaire de santé McGill / McGill University Health Centre	Montréal	QC	Type II	Medical
6-May-16	Centre universitaire de santé McGill / McGill University Health Centre	Montréal	QC	Type II	Medical
6-May-16	Metro Testing Laboratories Ltd.	Burnaby	BC	Type II	Industrial
9-May-16	Domtar Inc.	Dryden	ON	Type II	Industrial
9-May-16	Kam Tech Quality Management Inc.	Kamloops	BC	Type II	Industrial
10-May-16	Highland Valley Copper	Logan Lake	BC	Type II	Industrial
11-May-16	8418748 Canada Inc.	Montréal	QC	Type II	Industrial
11-May-16	Coveris Flexibles Canada Inc.	Whitby	ON	Type II	Industrial
11-May-16	Global Engineering & Testing Ltd	Calgary	AB	Type II	Industrial
11-May-16	Rouge Valley Health System	Scarborough	ON	Type II	Medical
11-May-16	Trans Mountain Pipeline ULC	Sherwood Park	AB	Type II	Industrial
11-May-16	Trans Mountain Pipeline ULC	Sherwood Park	AB	Type II	Industrial
12-May-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler A	Lloydminster	AB	Type II	Industrial
12-May-16	EXP Services Inc.	Brampton	ON	Type II	Industrial
12-May-16	Kam Tech Consulting Incorporated	Kamloops	BC	Type II	Industrial
12-May-16	Ontario Power Generation Inc.	Bowmanville	ON	Type II	Academic &

Inspection date	Licensee name	City	Province	Inspection type	Sector
					research
12-May-16	SGS Canada Inc.	Lakefield	ON	Type II	Industrial
13-May-16	EXP Services Inc.	Brampton	ON	Type II	Industrial
13-May-16	EXP Services Inc.	Brampton	ON	Type II	Industrial
13-May-16	Terraprobe Testing Ltd.	Brampton	ON	Type II	Industrial
13-May-16	Terraprobe Testing Ltd.	Brampton	ON	Type II	Industrial
16-May-16	3M Canada Company	London	ON	Type II	Industrial
16-May-16	EXP Services Inc.	Brampton	ON	Type II	Industrial
16-May-16	Fortress Specialty Cellulose Inc.	Thurso	QC	Type II	Industrial
16-May-16	Groupe ABS Inc.	St-Rémi	QC	Type II	Industrial
16-May-16	KPGP Inc.	Gatineau	QC	Type II	Industrial
16-May-16	M.J. Davenport & Associates Ltd.	Peterborough	ON	Type II	Industrial
16-May-16	Trent University	Peterborough	ON	Type II	Academic & research
17-May-16	Advanced Gauging Technologies, L.L.C.	Plain City	OH	Type II	Commercial
17-May-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler A	Lloydminster	AB	Type II	Industrial
17-May-16	Berry Plastics Canada Inc./	Belleville	ON	Type II	Industrial
17-May-16	Cascades Canada ULC	Kingsey Falls	QC	Type II	Industrial
17-May-16	Commandité Papier Masson WB Ltée	Gatineau	QC	Type II	Industrial
17-May-16	Construction Control Inc.	Concord	ON	Type II	Industrial
17-May-16	Construction DJL Inc./	Boucherville	QC	Type II	Industrial
17-May-16	Englobe Corp.	Laval	QC	Type II	Industrial
17-May-16	GHD Consultants Ltd.	Montréal	QC	Type II	Industrial
17-May-16	Groupe ABS Inc.	St-Rémi	QC	Type II	Industrial
17-May-16	Samuel, Son & Co. Limited	Stoney Creek	ON	Type II	Industrial
17-May-16	Sonoco Canada Corporation	Trenton	ON	Type II	Industrial
17-May-16	UTC Fire & Security Canada Inc. operating as Chubb Edwards	Mississauga	ON	Type II	Commercial
17-May-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
18-May-16	Centre de santé et de services sociaux de Gatineau	Gatineau	QC	Type II	Medical
18-May-16	Centre de santé et de services sociaux de Gatineau	Gatineau	QC	Type II	Medical
18-May-16	Coco Paving (1990) Inc.	Tecumseh	ON	Type II	Industrial
18-May-16	Essroc Canada Inc.	Picton	ON	Type II	Industrial
18-May-16	General Dynamics Land Systems - Canada Corporation	London	ON	Type II	Commercial
18-May-16	General Dynamics Land Systems - Canada Corporation	London	ON	Type II	Commercial

Inspection date	Licensee name	City	Province	Inspection type	Sector
18-May-16	General Dynamics Land Systems - Canada Corporation	London	ON	Type II	Commercial
18-May-16	General Dynamics Land Systems - Canada Corporation	London	ON	Type II	Commercial
18-May-16	GHD Consultants Ltd.	Montréal	QC	Type II	Industrial
18-May-16	J. & P. Leveque Bros. Haulage Ltd.	Bancroft	ON	Type II	Industrial
18-May-16	SNC-Lavalin GEM Québec Inc.	Montréal	QC	Type II	Industrial
18-May-16	Thermo Gamma-Metrics LLC	San Diego	CA	Type II	Commercial
19-May-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler A	Lloydminster	AB	Type II	Industrial
19-May-16	J. & P. Leveque Bros. Haulage Ltd.	Bancroft	ON	Type II	Industrial
19-May-16	Labatt Brewing Company Ltd. / La Brasserie Labatt limitée	London	ON	Type II	Industrial
19-May-16	MyHealth Partners Inc.	Toronto	ON	Type II	Medical
19-May-16	Thomas Cavanagh Construction Limited	Ashton	ON	Type II	Industrial
20-May-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
20-May-16	Medical Imaging Consultants	Edmonton	AB	Type II	Medical
20-May-16	Philips Electronics Ltd./Philips Electronique Ltée	Markham	ON	Type II	Commercial
20-May-16	Resolute FP Canada Inc. / PF Résolu Canada Inc.	Gatineau	QC	Type II	Industrial
20-May-16	Stratford General Hospital	Stratford	ON	Type II	Medical
20-May-16	Stratford General Hospital	Stratford	ON	Type II	Medical
24-May-16	Englobe Corp.	Laval	QC	Type II	Industrial
24-May-16	Thurber Engineering Ltd.	Calgary	AB	Type II	Industrial
25-May-16	Aecom Canada Ltd.	Edmonton	AB	Type II	Industrial
25-May-16	Cytec Canada Inc.	Niagara Falls	ON	Type II	Industrial
25-May-16	Endress + Hauser Canada Ltd./ Endress + Hauser Canada Ltée	Burlington	ON	Type II	Commercial
25-May-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
25-May-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
25-May-16	Golder Associates Ltd.	Saskatoon	SK	Type II	Academic & research
25-May-16	P. Machibroda Engineering Ltd.	Saskatoon	SK	Type II	Industrial
25-May-16	PanPacific Wireline Services Inc.	Brossard	QC	Type II	Industrial
25-May-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
25-May-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
26-May-16	ABB Inc.	Saint-Laurent	QC	Type II	Commercial
26-May-16	ABB Inc.	St-Laurent	QC	Type II	Commercial
26-May-16	Allnorth Consultants Limited	Terrace	BC	Type II	Industrial
26-May-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler	Lloydminster	AB	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
	Amériques Limitée				
26-May-16	North West Nuclear Medicine for Animals Inc.	Vancouver	BC	Type II	Medical
27-May-16	Associated Engineering (Sask.) Ltd.	Saskatoon	SK	Type II	Industrial
27-May-16	SNC-Lavalin Inc.	Saskatoon	SK	Type II	Industrial
27-May-16	SNC-Lavalin Inc.	Saskatoon	SK	Type II	Academic & research
30-May-16	Kresin Engineering Corporation	Sault Ste Marie	ON	Type II	Industrial
30-May-16	Lac des Iles Mines Ltd.	Thunder Bay	ON	Type II	Industrial
30-May-16	Pioneer Construction Inc.	Copper Cliff	ON	Type II	Industrial
31-May-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
31-May-16	Englobe Corp.	Laval	QC	Type II	Industrial
31-May-16	EXP Services Inc.	Laval	QC	Type II	Industrial
31-May-16	Hatch Ltd.	Clareville	NL	Type II	Industrial
31-May-16	Mike Abbot	Toronto	ON	Type II	Industrial
31-May-16	Mike Abbot (Aurico Metals Inc.)	Toronto	ON	Type II	Industrial
31-May-16	Resolute FP Canada Inc. / PF Résolu Canada Inc.	Thunder Bay	ON	Type II	Industrial
31-May-16	Robert S. Wilson	Sault Ste Marie	ON	Type II	Industrial
31-May-16	TBT Engineering Limited	Thunder Bay	ON	Type II	Industrial
31-May-16	Teranorth Construction & Engineering Limited	Sudbury	ON	Type II	Industrial
31-May-16	Tulloch Contract Administration Inc.	Thessalon	ON	Type II	Industrial
1-Jun-16	Centre de santé et de services sociaux de Gatineau	Gatineau	QC	Type II	Medical
1-Jun-16	Centre de santé et de services sociaux de Gatineau	Gatineau	QC	Type II	Medical
1-Jun-16	Essar Steel Algoma Inc.	Sault Ste. Marie	ON	Type II	Industrial
1-Jun-16	Hoban Equipment Ltd.	Vernon	BC	Type II	Industrial
1-Jun-16	Natural Resources Canada/ Ressources naturelles Canada	Ottawa	ON	Type II	Academic & research
2-Jun-16	Bruno's Contracting (Thunder Bay) Ltd.	Thunder Bay	ON	Type II	Industrial
2-Jun-16	DST Consulting Engineers Inc.	Kenora	ON	Type II	Industrial
2-Jun-16	Hatch Ltd.	Clareville	NL	Type II	Industrial
2-Jun-16	The University Hospital of Northern British Columbia,	Prince George	BC	Type II	Medical
3-Jun-16	Regional Municipality of Durham	Whitby	ON	Type II	Industrial
3-Jun-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
6-Jun-16	Cott Corporation	Mississauga	ON	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
7-Jun-16	University of British Columbia	Vancouver	BC	Type II	Academic & research
8-Jun-16	Associate Veterinary Clinics (1981) Ltd.	Calgary	AB	Type II	Medical
8-Jun-16	Peto MacCallum Ltd.	Kitchener	ON	Type II	Industrial
8-Jun-16	Shad & Associates Inc.	Vaughan	ON	Type II	Industrial
8-Jun-16	University of the Fraser Valley	Abbotsford	BC	Type II	Medical
9-Jun-16	Amgen British Columbia Inc.	Burnaby	BC	Type II	Medical
9-Jun-16	Groupe ABS Inc.	St-Rémi	QC	Type II	Industrial
10-Jun-16	The University Hospital of Northern British Columbia,	Prince George	BC	Type II	Medical
12-Jun-16	BCG Engineering Inc.	Halifax	NS	Type II	Industrial
12-Jun-16	Red Chris Development Company Ltd.	Dease Lake	BC	Type II	Industrial
13-Jun-16	Allnorth Consultants Limited	Terrace	BC	Type II	Industrial
13-Jun-16	MyHealth Partners Inc.	Toronto	ON	Type II	Medical
13-Jun-16	Opus Stewart Weir Ltd.	Sherwood Park	AB	Type II	Industrial
13-Jun-16	Seymour Pacific Developments Ltd.	Regina	SK	Type II	Industrial
14-Jun-16	Advance Testing Ltd.	Surrey	BC	Type II	Industrial
14-Jun-16	McConnell Brain Imaging Center	Montréal	QC	Type II	Academic & research
14-Jun-16	McConnell Brain Imaging Center	Montréal	QC	Type II	Medical
14-Jun-16	McConnell Brain Imaging Center	Montréal	QC	Type II	Medical
14-Jun-16	McElhanney Consulting Services Ltd.	Courtenay	BC	Type II	Industrial
14-Jun-16	Montreal Neurological Institute	Montréal	QC	Type II	Commercial
14-Jun-16	Teknoscan Systems Inc.	Vaughan	ON	Type II	Commercial
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research

Inspection date	Licensee name	City	Province	Inspection type	Sector
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
14-Jun-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
15-Jun-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler Amériques Limitée	Lloydminster	AB	Type II	Industrial
15-Jun-16	GeoNorth Engineering Ltd.	Prince George	BC	Type II	Industrial
16-Jun-16	EXP Services Inc.	Laval	QC	Type II	Industrial
16-Jun-16	Goldcorp Canada Ltd.	Houston	BC	Type II	Industrial
16-Jun-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
16-Jun-16	Huckleberry Mines Ltd.	Houston	BC	Type II	Industrial
16-Jun-16	Huckleberry Mines Ltd.	Houston	BC	Type II	Industrial
16-Jun-16	Manitoba Transportation and Government Services	West St. Paul	MB	Type II	Industrial
16-Jun-16	Manitoba Transportation and Government Services	West St. Paul	MB	Type II	Industrial
16-Jun-16	NU-B Inc.	St-Laurent	QC	Type II	Industrial
16-Jun-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
17-Jun-16	Allnorth Consultants Limited	Terrace	BC	Type II	Industrial
17-Jun-16	Englobe Corp.	Laval	QC	Type II	Industrial
17-Jun-16	GHD Consultants Ltd.	Montréal	QC	Type II	Industrial
17-Jun-16	Groupe ABS Inc.	St-Rémi	QC	Type II	Industrial
17-Jun-16	Groupe CRH Canada Inc. / CRH Canada Group Inc.	Laval	QC	Type II	Industrial
17-Jun-16	Groupe TNT Inc. / TNT Group Inc.	Boisbriand	QC	Type II	Industrial
17-Jun-16	Siemens Molecular Imaging, Inc.	Knoxville	TN	Type II	Commercial
17-Jun-16	SNC-Lavalin GEM Québec Inc.	Montréal	QC	Type II	Industrial
17-Jun-16	West-Can Inspection Ltd.	Winnipeg	MB	Type II	Industrial
20-Jun-16	Groupe ABS Inc.	St-Rémi	QC	Type II	Industrial
20-Jun-16	Schlumberger Canada Limited	Calgary	AB	Type II	Industrial
20-Jun-16	Standard General Inc.	Calgary	AB	Type II	Industrial
20-Jun-16	Standard General Inc.	Calgary	AB	Type II	Industrial
21-Jun-16	Aecon Construction and Materials Limited	Caledon	ON	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
21-Jun-16	Canadian Nuclear Safety Commission	Ottawa	ON	Type II	Academic & research
21-Jun-16	Groupe ABS Inc.	St-Rémi	QC	Type II	Industrial
21-Jun-16	Groupe ABS Inc.	St-Rémi	QC	Type II	Industrial
22-Jun-16	Institut de recherches cliniques de Montréal	Montréal	QC	Type II	Academic & research
22-Jun-16	Institut de recherches cliniques de Montréal	Montréal	QC	Type II	Medical
22-Jun-16	Nine Energy Canada Inc.	Clairmont	AB	Type II	Industrial
22-Jun-16	Troxler Canada Inc.	Laval	QC	Type II	Commercial
22-Jun-16	Troxler Canada Inc.	Laval	QC	Type II	Commercial
23-Jun-16	Bakos (N.D.T.) Inspection (1989) Ltd.	Whitecourt	AB	Type II	Industrial
23-Jun-16	Magnum Perforating Services Inc.	Drayton Valley	AB	Type II	Industrial
23-Jun-16	Nelson's Welding Inspection Limited	Drayton Valley	AB	Type II	Industrial
23-Jun-16	SNC-Lavalin GEM Québec Inc.	Montréal	QC	Type II	Industrial
27-Jun-16	Centre intégré universitaire de santé et	Montréal	QC	Type II	Medical
27-Jun-16	Centre intégré universitaire de santé et de services sociaux	Montréal	QC	Type II	Commercial
28-Jun-16	Aecon Construction and Materials Limited	Caledon	ON	Type II	Industrial
28-Jun-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler A	Lloydminster	AB	Type II	Industrial
29-Jun-16	3M Canada Company	London	ON	Type II	Industrial
29-Jun-16	Alberta Agriculture and Rural Development	Lethbridge	AB	Type II	Industrial
29-Jun-16	Alberta Agriculture and Rural Development	Lethbridge	AB	Type II	Industrial
29-Jun-16	Coco Paving (1990) Inc.	Tecumseh	ON	Type II	Industrial
29-Jun-16	General Dynamics Produits de défense et Systemes Tactiques - Canada Inc.	Le Gardeur	QC	Type I	Academic & research
29-Jun-16	GHD Consultants Ltd.	Montréal	QC	Type II	Industrial
29-Jun-16	Tuboscope Vetco Canada ULC	Nisku	AB	Type II	Industrial
30-Jun-16	Soil Engineers Ltd.	Toronto	ON	Type II	Industrial
4-Jul-16	Hoban Equipment Ltd.	Vernon	BC	Type II	Industrial
4-Jul-16	Hôpital de Verdun	Verdun	QC	Type II	Medical
4-Jul-16	Hôpital de Verdun	Verdun	QC	Type II	Medical
4-Jul-16	Millar Western Forest Products Ltd.	Whitecourt	AB	Type II	Industrial
4-Jul-16	Mitsubishi Hitachi Power Systems Canada, Ltd.	Saskatoon	SK	Type II	Industrial
4-Jul-16	MNA Engineering Ltd.	Scarborough	ON	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
4-Jul-16	NARL Refining Inc.	Come By Chance	NL	Type II	Industrial
4-Jul-16	Pro-Test Professional Testing & Inspection Co. Ltd.	Winnipeg	MB	Type II	Industrial
4-Jul-16	Pro-Test Professional Testing & Inspection Co. Ltd.	Winnipeg	MB	Type II	Industrial
4-Jul-16	Stantec Consulting Ltd.	Barrie	ON	Type II	Industrial
5-Jul-16	1583023 Alberta Ltd.	St. Albert	AB	Type II	Industrial
5-Jul-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
5-Jul-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
5-Jul-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
5-Jul-16	Bunge Canada Holdings I ULC	Oakville	ON	Type II	Industrial
5-Jul-16	Canada Border Services Agency	Ottawa	ON	Type II	Industrial
5-Jul-16	Clifton Associates Ltd.	Regina	SK	Type II	Industrial
5-Jul-16	Englobe Corp.	Laval	QC	Type II	Industrial
5-Jul-16	Pengrowth Corporation	Calgary	AB	Type II	Industrial
5-Jul-16	Schlumberger Canada Limited	Calgary	AB	Type II	Industrial
5-Jul-16	SNC -Lavalin Industrial Atlantic Inc.	Paradise	NL	Type II	Industrial
5-Jul-16	Sunnybrook Health Sciences Centre	Toronto	ON	Type II	Medical
6-Jul-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler A	Lloydminster	AB	Type II	Industrial
6-Jul-16	A-Tech N.D.T. Limited	Whitcourt	AB	Type II	Industrial
6-Jul-16	Browning Harvey Limited	St.John's	NL	Type II	Industrial
6-Jul-16	Clunie Consulting Engineers Ltd.	Prince Albert	SK	Type II	Industrial
6-Jul-16	Coco Paving (1990) Inc.	Tecumseh	ON	Type II	Industrial
6-Jul-16	Enbridge Employee Services Canada Inc.	Edmonton	AB	Type II	Industrial
6-Jul-16	EXP Services Inc.	Fredericton	NB	Type II	Industrial
6-Jul-16	GHD Consultants Ltd.	Montréal	QC	Type II	Industrial
6-Jul-16	Honeywell Ltd	Lachine	QC	Type II	Commercial
6-Jul-16	Imperial Oil Limited/ Compagnie Pétrolière Impériale Ltée	East St. Paul	MB	Type II	Industrial
6-Jul-16	Iogen Corporation	Ottawa	ON	Type II	Industrial
6-Jul-16	IonBeam Applications S.A.	Louvain-la-Neuve	Belgium	Type II	Commercial
6-Jul-16	K+S Potash Canada General Partnership	Saskatoon	SK	Type II	Industrial
6-Jul-16	Labo S.M. Inc.	Longueuil	QC	Type II	Industrial
6-Jul-16	Merivale Medical Imaging Inc.	Nepean	ON	Type II	Medical
6-Jul-16	Pro-Test Professional Testing & Inspection Co. Ltd.	Winnipeg	MB	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
6-Jul-16	Reliance OFS Canada Ltd.	Blackfalds	AB	Type II	Industrial
6-Jul-16	Suncor Energy Inc.	St.John's	NL	Type II	Industrial
6-Jul-16	The Eastern Regional Integrated Health Authority	St.John's	NL	Type II	Medical
6-Jul-16	The Eastern Regional Integrated Health Authority	St. John's	NL	Type II	Medical
7-Jul-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
7-Jul-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
7-Jul-16	Aecom Canada Ltd.	Edmonton	AB	Type II	Industrial
7-Jul-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler A	Lloydminster	AB	Type II	Industrial
7-Jul-16	Englobe Corp.	Laval	QC	Type II	Industrial
7-Jul-16	Eng-Tech Consulting Limited	Winnipeg	MB	Type II	Industrial
7-Jul-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
7-Jul-16	Morey Associates Limited	Kemptville	ON	Type II	Industrial
7-Jul-16	Pembina Pipeline Corporation	Sherwood Park	AB	Type II	Industrial
7-Jul-16	SNC-Lavalin Inc.	Saskatoon	SK	Type II	Industrial
7-Jul-16	Stantec Consulting Ltd.	Barrie	ON	Type II	Industrial
7-Jul-16	The Eastern Regional Integrated Health Authority	St.John's	NL	Type II	Medical
7-Jul-16	The Eastern Regional Integrated Health Authority	St. John's	NL	Type II	Medical
7-Jul-16	TISI Canada Inc.	Oakville	ON	Type II	Industrial
7-Jul-16	Tusk Inspection Services Inc.	Fox Creek	AB	Type II	Industrial
8-Jul-16	Aker Solutions Asset Integrity and Management Canada Inc.	St. John's	NL	Type II	Industrial
8-Jul-16	Baker Hughes Canada Company	Leduc	AB	Type II	Industrial
8-Jul-16	EXP Services Inc.	Fredericton	NB	Type II	Industrial
8-Jul-16	Husky Oil Operations Limited	St. John's	NL	Type II	Industrial
8-Jul-16	Labatt Brewing Company Ltd. / La Brasserie Labatt limitée	London	ON	Type II	Industrial
11-Jul-16	Canadian Tower Scanning Inc.	Sarnia	ON	Type II	Industrial
11-Jul-16	Clifton Associates Ltd.	Regina	SK	Type II	Industrial
11-Jul-16	Stantec Consulting Ltd.	Barrie	ON	Type II	Industrial
11-Jul-16	WSP Canada	Red Deer	AB	Type I	Industrial
12-Jul-16	Canadian Natural Resources Limited	Bonnyville	AB	Type II	Industrial
12-Jul-16	Canadian Natural Resources Limited	Bonnyville	AB	Type II	Industrial
12-Jul-16	Cruickshank Construction Limited	Morrisburg	ON	Type II	Industrial
12-Jul-16	Cruickshank Construction Limited	Morrisburg	ON	Type II	Industrial
12-Jul-16	K.J. Beamish Construction Co., Limited	King City	ON	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
12-Jul-16	Structural Inspections Limited	Milton	ON	Type II	Industrial
12-Jul-16	Terraprobe Testing Ltd.	Brampton	ON	Type II	Industrial
12-Jul-16	Terraprobe Testing Ltd.	Brampton	ON	Type II	Industrial
13-Jul-16	Clifton Associates Ltd.	Regina	SK	Type II	Industrial
13-Jul-16	Enbridge Employee Services Canada Inc.	Edmonton	AB	Type II	Industrial
13-Jul-16	Enbridge Employee Services Canada Inc.	Edmonton	AB	Type II	Industrial
13-Jul-16	Express Pipeline Ltd.	Sherwood Park	AB	Type II	Industrial
13-Jul-16	Q Test Inspection Ltd.	Sylvan Lake	AB	Type II	Industrial
13-Jul-16	Soil Engineers Ltd.	Toronto	ON	Type II	Industrial
14-Jul-16	Hunt Inspection Ltd.	Stettler	AB	Type II	Industrial
14-Jul-16	Insight Medical Holdings Ltd.	Edmonton	AB	Type II	Medical
14-Jul-16	Insight Medical Holdings Ltd.	Edmonton	AB	Type II	Medical
14-Jul-16	McClymont and Rak Engineers Inc.	Vaughan	ON	Type II	Industrial
14-Jul-16	Misericordia Community Hospital	Edmonton	AB	Type II	Medical
14-Jul-16	Misericordia Community Hospital	Edmonton	AB	Type II	Medical
14-Jul-16	Shad & Associates Inc.	Vaughan	ON	Type II	Industrial
14-Jul-16	TISI Canada Inc.	Oakville	ON	Type II	Industrial
14-Jul-16	Tuboscope Vetco Canada ULC	Nisku	AB	Type II	Industrial
15-Jul-16	The Cobalt Refinery Company Inc.	Fort Saskatchewan	AB	Type II	Industrial
16-Jul-16	Sunnybrook Health Sciences Centre	Toronto	ON	Type II	Medical
16-Jul-16	Sunnybrook Health Sciences Centre	Toronto	ON	Type II	Medical
18-Jul-16	AM Inspection Limited	Cabri	SK	Type II	Industrial
18-Jul-16	Groupe ABS Inc.	St-Rémi	QC	Type II	Industrial
18-Jul-16	Labo S.M. Inc.	Longueuil	QC	Type II	Industrial
18-Jul-16	TechSpec NDT Limited	Grande Prairie	AB	Type II	Industrial
18-Jul-16	Ville de Montréal / Division de l'expertise et du soutien te	Montréal	QC	Type II	Industrial
19-Jul-16	Alston Associates Inc.	Toronto	ON	Type II	Industrial
19-Jul-16	Canyon Technical Services Ltd.	Red Deer	AB	Type II	Industrial
19-Jul-16	EXP Services Inc.	Brampton	ON	Type II	Industrial
19-Jul-16	Mistras Canada, Inc.	Olds	AB	Type II	Industrial
19-Jul-16	Stuart Hunt & Associates Ltd.	St Albert	AB	Type II	Commercial
19-Jul-16	Superior General Partner Inc.	Toronto	ON	Type II	Industrial
19-Jul-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
20-Jul-16	20/20 ND Technology Inc.	Grande Prairie	AB	Type II	Industrial
20-Jul-16	Halliburton Canada	Edmonton	AB	Type II	Industrial
20-Jul-16	Inspectrum Testing Inc.	Grande Prairie	AB	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
20-Jul-16	Inspectrum Testing Inc.	Grande Prairie	AB	Type II	Industrial
20-Jul-16	Schlumberger Canada Limited	Calgary	AB	Type II	Industrial
20-Jul-16	Schlumberger Canada Limited	Calgary	AB	Type II	Industrial
20-Jul-16	Stantec Consulting Ltd.	Barrie	ON	Type II	Industrial
20-Jul-16	Stantec Consulting Ltd.	Barrie	ON	Type II	Industrial
20-Jul-16	Stantec Consulting Ltd.	Barrie	ON	Type II	Industrial
21-Jul-16	Buffalo Inspection Services (2005) Inc.	Edmonton	AB	Type II	Industrial
21-Jul-16	City of Calgary	Calgary	AB	Type II	Industrial
21-Jul-16	Nortech Advanced N.D.T. Ltd.	Sherwood Park	AB	Type II	Industrial
21-Jul-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
24-Jul-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
25-Jul-16	Gamma-Tech Inspection Ltd.	Calgary	AB	Type II	Industrial
25-Jul-16	GeoPacific Consultants Ltd.	Vancouver	BC	Type II	Industrial
25-Jul-16	GeoPacific Consultants Ltd.	Vancouver	BC	Type II	Industrial
25-Jul-16	Process Research ORTECH Inc.	Mississauga	ON	Type II	Academic & research
25-Jul-16	RTD Quality Services Inc.	Burlington	ON	Type II	Industrial
25-Jul-16	The Pepsi Bottling Group (Canada), ULC	Winnipeg	MB	Type II	Industrial
25-Jul-16	University of British Columbia	Vancouver	BC	Type II	Medical
25-Jul-16	WAV Inspection Ltd.	Brooks	AB	Type II	Industrial
26-Jul-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
26-Jul-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
26-Jul-16	Aecon Transportation West Ltd.	Calgary	AB	Type II	Industrial
26-Jul-16	All Test International Inc.	Brooks	AB	Type II	Industrial
26-Jul-16	All Test International Inc.	Brooks	AB	Type II	Industrial
26-Jul-16	Almadon Holdings Ltd.	Calgary	AB	Type II	Medical
26-Jul-16	Almor Testing Services Ltd.	Calgary	AB	Type II	Industrial
26-Jul-16	Almor Testing Services Ltd.	Calgary	AB	Type II	Industrial
26-Jul-16	Almor Testing Services Ltd.	Calgary	AB	Type II	Industrial
26-Jul-16	Cascades Canada ULC	Kingsey Falls	QC	Type II	Industrial
26-Jul-16	Department of Medical Imaging	Comox	BC	Type II	Medical
26-Jul-16	Lewkowich Engineering Associates Ltd.	Nanaimo	BC	Type II	Industrial
26-Jul-16	McElhanney Consulting Services Ltd.	Courtenay	BC	Type II	Industrial
26-Jul-16	Natural Resources Canada	Ottawa	ON	Type II	Industrial
26-Jul-16	Northwest Engineers	Surrey	BC	Type II	Industrial
26-Jul-16	Parkland Geotechnical Consulting Ltd.	Red Deer	AB	Type II	Industrial
26-Jul-16	St. Joseph's General Hospital	Comox	BC	Type II	Medical

Inspection date	Licensee name	City	Province	Inspection type	Sector
26-Jul-16	Sylvia Fedrouk Canadian Centre for Nuclear Innovation Inc.	Saskatoon	SK	Type II	Commercial
26-Jul-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
27-Jul-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
27-Jul-16	Almor Testing Services Ltd.	Calgary	AB	Type II	Industrial
27-Jul-16	Davies Geotechnical Inc.	Delta	BC	Type II	Industrial
27-Jul-16	Industrial Radiography Supplies & Services Inc.	Edmonton	AB	Type II	Commercial
27-Jul-16	LAW Inspection Services Inc.	Lethbridge	AB	Type II	Industrial
27-Jul-16	LAW Inspection Services Inc.	Lethbridge	AB	Type II	Industrial
27-Jul-16	Mark Anthony Group Inc.	Delta	BC	Type II	Industrial
27-Jul-16	McElhanney Consulting Services Ltd.	Courtenay	BC	Type II	Industrial
27-Jul-16	MNA Engineering Ltd.	Scarborough	ON	Type II	Industrial
27-Jul-16	MNA Engineering Ltd.	Scarborough	ON	Type II	Industrial
27-Jul-16	Peto MacCallum Ltd.	Kitchener	ON	Type II	Industrial
27-Jul-16	Peto MacCallum Ltd.	Kitchener	ON	Type II	Industrial
27-Jul-16	Terraprobe Testing Ltd.	Brampton	ON	Type II	Industrial
27-Jul-16	Tetra Tech EBA Inc.	Calgary	AB	Type II	Industrial
27-Jul-16	The Pepsi Bottling Group (Canada), ULC	Delta	BC	Type II	Industrial
27-Jul-16	Thurber Engineering Ltd.	Calgary	AB	Type II	Industrial
28-Jul-16	All Test International Inc.	Brooks	AB	Type II	Industrial
28-Jul-16	AR Geotechnical Engineering Ltd.	Medicine Hat	AB	Type II	Industrial
28-Jul-16	Catalyst Paper Corporation	Powell River	BC	Type II	Industrial
28-Jul-16	Constellation Brands Canada, Inc.	Niagara Falls	ON	Type II	Industrial
28-Jul-16	Graymar Equipment (2008) Inc.	New Westminster	BC	Type II	Industrial
28-Jul-16	Graymar Equipment (2008) Inc.	New Westminster	BC	Type II	Industrial
28-Jul-16	Graymar Equipment (2008) Inc.	New Westminster	BC	Type II	Industrial
28-Jul-16	Interlake Acquisition Corporation Limited	St.Catharines	ON	Type II	Industrial
28-Jul-16	Klohn Crippen Berger Ltd.	Vancouver	BC	Type II	Industrial
28-Jul-16	Lafarge Canada Inc.	Exshaw	AB	Type II	Industrial
28-Jul-16	LAW Inspection Services Inc.	Lethbridge	AB	Type II	Industrial
28-Jul-16	Molson Canada 2005	Toronto	ON	Type II	Industrial
28-Jul-16	Saskatchewan Cancer Agency	Saskatoon	SK	Type II	Medical
28-Jul-16	Saskatchewan Cancer Agency	Saskatoon	SK	Type II	Medical
28-Jul-16	Weyerhaeuser Company Limited	Kenora	ON	Type II	Industrial
29-Jul-16	City of Vancouver	Vancouver	BC	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
29-Jul-16	Isologic Innovative Radiopharmaceuticals Ltd.	Lachine	QC	Type II	Commercial
29-Jul-16	Isologic Innovative Radiopharmaceuticals Ltd.	Dorval	QC	Type II	Commercial
29-Jul-16	Reliance OFS Canada Ltd.	Blackfalds	AB	Type II	Industrial
5-Aug-16	Menu Foods Limited	Mississauga	ON	Type II	Industrial
5-Aug-16	St. Mary's Hospital Centre	Montréal	QC	Type II	Medical
5-Aug-16	St. Mary's Hospital Centre	Montréal	QC	Type II	Medical
8-Aug-16	Cott Corporation	Mississauga	ON	Type II	Industrial
8-Aug-16	Englobe Corp.	Laval	QC	Type II	Industrial
8-Aug-16	Mistras Canada, Inc.	Olds	AB	Type II	Industrial
8-Aug-16	Solmatech Inc.	Le Gardeur	QC	Type II	Industrial
9-Aug-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler A	Lloydminster	AB	Type II	Industrial
9-Aug-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler A	Lloydminster	AB	Type II	Industrial
9-Aug-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler A	Lloydminster	AB	Type II	Industrial
9-Aug-16	Graham Bros. Construction Limited	Brampton	ON	Type II	Industrial
9-Aug-16	Graymar Equipment (2008) Inc.	New Westminster	BC	Type II	Industrial
9-Aug-16	Graymar Equipment (2008) Inc.	New Westminster	BC	Type II	Industrial
10-Aug-16	A & A Concrete X-Ray and Coring Ltd.	Langley	BC	Type II	Industrial
10-Aug-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
10-Aug-16	Advance Testing Ltd.	Surrey	BC	Type II	Industrial
10-Aug-16	All Can Inspection Services (2011) Inc.	Edmonton	AB	Type II	Industrial
10-Aug-16	Thermo Gamma-Metrics LLC	San Diego	CA	Type II	Commercial
11-Aug-16	Advance Testing Ltd.	Surrey	BC	Type II	Industrial
11-Aug-16	Aecon Construction and Materials Limited	Caledon	ON	Type II	Industrial
11-Aug-16	Atlantic Steel Processing Inc.	Mississauga	ON	Type II	Industrial
11-Aug-16	City of Vancouver	Vancouver	BC	Type II	Industrial
11-Aug-16	City of Vancouver	Vancouver	BC	Type II	Industrial
11-Aug-16	Imperial Oil Resources Limited	East St. Paul	MB	Type II	Industrial
11-Aug-16	Imperial Oil Resources Limited	East St. Paul	MB	Type II	Industrial
11-Aug-16	Imperial Oil Resources Limited	East St. Paul	MB	Type II	Industrial
11-Aug-16	Imperial Oil Resources Limited	East St. Paul	MB	Type II	Industrial
11-Aug-16	KPGP Inc.	Gatineau	QC	Type II	Industrial
11-Aug-16	Le Groupe Dimension Multi Veterinaire Inc	Lachine	QC	Type II	Medical

Inspection date	Licensee name	City	Province	Inspection type	Sector
11-Aug-16	Le Groupe Dimension Multi Veterinaire Inc	Lachine	QC	Type II	Medical
11-Aug-16	Metro Testing Laboratories Ltd.	Burnaby	BC	Type II	Industrial
11-Aug-16	Polar Pak Inc.	Brampton	ON	Type II	Industrial
12-Aug-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
12-Aug-16	Pembina Pipeline Corporation	Sherwood Park	AB	Type II	Industrial
12-Aug-16	Pembina Pipeline Corporation	Sherwood Park	AB	Type II	Industrial
12-Aug-16	Pembina Pipeline Corporation	Sherwood Park	AB	Type II	Industrial
12-Aug-16	Pembina Pipeline Corporation	Sherwood Park	AB	Type II	Industrial
12-Aug-16	Pembina Pipeline Corporation	Sherwood Park	AB	Type II	Industrial
12-Aug-16	Pembina Pipeline Corporation	Sherwood Park	AB	Type II	Industrial
12-Aug-16	Pembina Pipeline Corporation	Sherwood Park	AB	Type II	Industrial
12-Aug-16	Pembina Pipeline Corporation	Sherwood Park	AB	Type II	Industrial
12-Aug-16	Pembina Pipeline Corporation	Sherwood Park	AB	Type II	Industrial
12-Aug-16	Thurber Engineering Ltd.	Calgary	AB	Type II	Industrial
12-Aug-16	Thurber Engineering Ltd.	Calgary	AB	Type II	Industrial
15-Aug-16	De Beers Canada Inc.	Timmins	ON	Type II	Industrial
15-Aug-16	De Beers Victor Project Office	Timmins	ON	Type II	Industrial
15-Aug-16	EXL Engineering Inc.	Delta	BC	Type II	Industrial
15-Aug-16	TTES Consulting Inc.	MacGregor	MB	Type II	Industrial
15-Aug-16	University of British Columbia	Vancouver	BC	Type II	Academic & research
15-Aug-16	Vancouver Coastal Health Authority	Vancouver	BC	Type II	Medical
15-Aug-16	Vancouver Coastal Health Authority	Vancouver	BC	Type II	Medical
15-Aug-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
16-Aug-16	2273044 Ontario Inc.	Vaughan	ON	Type II	Medical
16-Aug-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
16-Aug-16	Bunge Canada Holdings I ULC	Oakville	ON	Type II	Industrial
16-Aug-16	EXP Services Inc.	Brampton	ON	Type II	Industrial
16-Aug-16	Interior Health Authority	Vernon	BC	Type II	Medical
16-Aug-16	Interior Health Authority	Vernon	BC	Type II	Medical
16-Aug-16	Jim Dent Construction Ltd.	Hope	BC	Type II	Industrial
16-Aug-16	Kootenay Boundary Regional Hospital	Trail	BC	Type II	Medical
16-Aug-16	Kootenay Boundary Regional Hospital	Trail	BC	Type II	Medical
16-Aug-16	Louisiana - Pacific Canada Ltd.	Vancouver	BC	Type II	Industrial
16-Aug-16	PEI Cancer Treatment Centre	Charlottetown	PE	Type II	Medical
16-Aug-16	Sleeman Breweries Ltd.	Guelph	ON	Type II	Industrial
16-Aug-16	Timmins and District Hospital	Timmins	ON	Type II	Medical
16-Aug-16	Timmins and District Hospital	Timmins	ON	Type II	Medical

Inspection date	Licensee name	City	Province	Inspection type	Sector
16-Aug-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
17-Aug-16	C. Villeneuve Construction Co. Ltd.	Hearst	ON	Type II	Industrial
17-Aug-16	Detour Gold Corporation	Cochrane	ON	Type II	Industrial
17-Aug-16	Emil Anderson Construction Co. Ltd.	Hope	BC	Type II	Industrial
17-Aug-16	Interior Testing Services Ltd.	Kelowna	BC	Type II	Industrial
17-Aug-16	Labatt Brewing Company Ltd. / La Brasserie Labatt limitée	London	ON	Type II	Industrial
17-Aug-16	Manitoba Transportation and Government Services	West St. Paul	MB	Type II	Industrial
17-Aug-16	Novadaq Technologies Inc.	Burnaby	BC	Type II	Commercial
17-Aug-16	R.M. Belanger Limited	Chelmsford	ON	Type II	Industrial
17-Aug-16	R.M. Belanger Limited	Chelmsford	ON	Type II	Industrial
17-Aug-16	Slick Inspection Limited	Medicine Hat	AB	Type II	Industrial
17-Aug-16	Southlake Regional Health Centre	Newmarket	ON	Type II	Medical
17-Aug-16	Southlake Regional Health Centre	Newmarket	ON	Type II	Medical
17-Aug-16	Southlake Regional Health Centre	Newmarket	ON	Type II	Medical
17-Aug-16	Stasuk Testing & Inspection Ltd.	Burnaby	BC	Type II	Industrial
17-Aug-16	TBT Engineering Limited	Thunder Bay	ON	Type II	Industrial
17-Aug-16	Teck Metals Ltd.	Kimberley	BC	Type II	Industrial
17-Aug-16	Teranorth Construction & Engineering Limited	Sudbury	ON	Type II	Industrial
17-Aug-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
18-Aug-16	Arthon Industries Limited	Kelowna	BC	Type II	Industrial
18-Aug-16	InterWrap Inc.	Vancouver	BC	Type II	Industrial
18-Aug-16	Manitoba Transportation and Government Services	West St. Paul	MB	Type II	Industrial
18-Aug-16	Manitoba Transportation and Government Services	West St. Paul	MB	Type II	Industrial
18-Aug-16	Primero Mining Corp.	Matheson	ON	Type II	Industrial
18-Aug-16	Teck Coal Limited	Sparwood	BC	Type II	Industrial
18-Aug-16	University of British Columbia	Vancouver	BC	Type II	Academic & research
18-Aug-16	University of British Columbia	Vancouver	BC	Type II	Academic & research
18-Aug-16	University of British Columbia	Vancouver	BC	Type II	Academic & research
18-Aug-16	University of British Columbia	Vancouver	BC	Type II	Academic & research
18-Aug-16	University of British Columbia	Vancouver	BC	Type II	Academic & research
18-Aug-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
19-Aug-16	Kelowna General Hospital	Kelowna	BC	Type II	Medical
19-Aug-16	Kelowna General Hospital	Kelowna	BC	Type II	Medical

Inspection date	Licensee name	City	Province	Inspection type	Sector
19-Aug-16	Kontzamanis, Graumann, Smith MacMillan Inc.	Winnipeg	MB	Type II	Industrial
19-Aug-16	The Corporation of the City of Timmins	Timmins	ON	Type II	Industrial
19-Aug-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
22-Aug-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
23-Aug-16	Amhil Enterprises	Burlington	ON	Type II	Industrial
23-Aug-16	Amhil Enterprises	Burlington	ON	Type II	Industrial
23-Aug-16	Soil Engineers Ltd.	Toronto	ON	Type II	Industrial
23-Aug-16	Vale Canada Limited	Copper Cliff	ON	Type II	Industrial
23-Aug-16	Vale Canada Limited	Copper Cliff	ON	Type II	Industrial
23-Aug-16	Vale Canada Limited	Copper Cliff	ON	Type II	Industrial
24-Aug-16	Alston Associates Inc.	Toronto	ON	Type II	Industrial
24-Aug-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler A	Lloydminster	AB	Type II	Industrial
24-Aug-16	Best Theratronics Ltd.	Ottawa	ON	Type II	Commercial
24-Aug-16	Coco Paving (1990) Inc.	Tecumseh	ON	Type II	Industrial
24-Aug-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
24-Aug-16	Isologic Innovative Radiopharmaceuticals Ltd.	Lacine	QC	Type II	Commercial
24-Aug-16	R.M. Belanger Limited	Chelmsford	ON	Type II	Industrial
24-Aug-16	Teranorth Construction & Engineering Limited	Sudbury	ON	Type II	Industrial
24-Aug-16	Terraprobe Testing Ltd.	Brampton	ON	Type II	Industrial
25-Aug-16	Glencore Canada Corporation	Onaping	ON	Type II	Industrial
25-Aug-16	Glencore Canada Corporation	Onaping	ON	Type II	Industrial
25-Aug-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
25-Aug-16	IKO Industries Ltd.	Brampton	ON	Type II	Industrial
25-Aug-16	Interpaving Asphalt and Aggregate Supply Ltd.	Garson	ON	Type II	Industrial
25-Aug-16	Lavis Contracting Co. Limited	Clinton	ON	Type II	Industrial
25-Aug-16	The Regional Municipality of Halton	Oakville	ON	Type II	Industrial
26-Aug-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler A	Lloydminster	AB	Type II	Industrial
26-Aug-16	Commandité Emballages Kruger Inc.	Montréal	QC	Type II	Industrial
26-Aug-16	GHD Consultants Ltd.	Montréal	QC	Type II	Industrial
26-Aug-16	Glencore Canada Corporation	Onaping	ON	Type II	Industrial
26-Aug-16	Honeywell Ltd	Lachine	QC	Type II	Commercial
29-Aug-16	EXP Services Inc.	Brampton	ON	Type II	Industrial
29-Aug-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
30-Aug-16	AGS Associates Inc.	Toronto	ON	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
30-Aug-16	EXP Services Inc.	Brampton	ON	Type II	Industrial
30-Aug-16	GHD Consultants Ltd.	Montréal	QC	Type II	Industrial
30-Aug-16	KMH Cardiology Centres Incorporated	Mississauga	ON	Type II	Medical
30-Aug-16	Miller Group Inc.	North Bay	ON	Type II	Industrial
30-Aug-16	MNA Engineering Ltd.	Scarborough	ON	Type II	Industrial
30-Aug-16	MNA Engineering Ltd.	Scarborough	ON	Type II	Industrial
30-Aug-16	MNA Engineering Ltd.	Scarborough	ON	Type II	Industrial
30-Aug-16	North Bay General Hospital	North Bay	ON	Type II	Medical
30-Aug-16	North Bay General Hospital	North Bay	ON	Type II	Medical
30-Aug-16	St. Mary's General Hospital	Kitchener	ON	Type II	Medical
30-Aug-16	St. Mary's General Hospital	Kitchener	ON	Type II	Medical
30-Aug-16	St. Mary's General Hospital	Kitchener	ON	Type II	Medical
30-Aug-16	St. Mary's General Hospital	Kitchener	ON	Type II	Medical
31-Aug-16	Cambridge Memorial Hospital	Cambridge	ON	Type II	Medical
31-Aug-16	City of Calgary	Calgary	AB	Type II	Industrial
31-Aug-16	Huntsville District Memorial Hospital	Huntsville	ON	Type II	Medical
31-Aug-16	North York General Hospital	North York	ON	Type II	Medical
31-Aug-16	North York General Hospital	North York	ON	Type II	Medical
31-Aug-16	Terraprobe Testing Ltd.	Brampton	ON	Type II	Industrial
1-Sep-16	Fowler Construction Company Ltd.	Bracebridge	ON	Type II	Industrial
1-Sep-16	KMH Cardiology Centres Incorporated	Mississauga	ON	Type II	Medical
1-Sep-16	KMH Cardiology Centres Incorporated	Mississauga	ON	Type II	Medical
1-Sep-16	Trillium Imaging Inc.	Toronto	ON	Type II	Medical
1-Sep-16	Tulloch Contract Administration Inc.	Thessalon	ON	Type II	Industrial
2-Sep-16	RTD Quality Services Inc.	Burlington	ON	Type II	Industrial
2-Sep-16	RTD Quality Services Inc.	Burlington	ON	Type II	Industrial
6-Sep-16	Alston Associates Inc.	Toronto	ON	Type II	Industrial
6-Sep-16	Apotex Inc.	Toronto	ON	Type II	Academic & research
6-Sep-16	Bare Contracting Services Ltd.	Mississauga	ON	Type II	Industrial
6-Sep-16	Beta Research Laboratories Ltd.	Calgary	AB	Type II	Industrial
6-Sep-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
6-Sep-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
6-Sep-16	Soil Engineers Ltd.	Toronto	ON	Type II	Industrial
7-Sep-16	ArcelorMittal Coteau-du-Lac Inc.	Coteau-du-Lac	QC	Type II	Industrial
7-Sep-16	ArcelorMittal Coteau-du-Lac Inc.	Coteau-du-Lac	QC	Type II	Industrial
7-Sep-16	Groupe ABS Inc.	St-Rémi	QC	Type II	Industrial
7-Sep-16	Sintra Inc.	Montréal	QC	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
7-Sep-16	WorleyParsons Canada Services Ltd.	Calgary	AB	Type II	Industrial
7-Sep-16	WorleyParsons Canada Services Ltd.	Calgary	AB	Type II	Industrial
8-Sep-16	Englobe Corp.	Laval	QC	Type II	Industrial
8-Sep-16	EXP Services Inc.	Brampton	ON	Type II	Industrial
8-Sep-16	GHD Consultants Ltd.	Montréal	QC	Type II	Industrial
8-Sep-16	NOVA Chemicals Corporation	Calgary	AB	Type II	Industrial
9-Sep-16	Almadon Holdings Ltd.	Calgary	AB	Type II	Medical
9-Sep-16	Cordax Evaluation Tehnologies Inc.	Calgary	AB	Type II	Industrial
9-Sep-16	Ottawa Cardiovascular Centre - Orleans Inc.	Ottawa	ON	Type II	Medical
9-Sep-16	WSP Canada	Toronto	ON	Type II	Industrial
9-Sep-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
9-Sep-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
12-Sep-16	Breton N.D. Testing Incorporated	Reserve Mines	NS	Type II	Industrial
12-Sep-16	EXP Services Inc.	Brampton	ON	Type II	Industrial
12-Sep-16	Geowest Testing Services Ltd.	North Vancouver	BC	Type II	Industrial
12-Sep-16	Kelowna General Hospital	Kelowna	BC	Type II	Medical
12-Sep-16	Metro Testing Laboratories Ltd.	Burnaby	BC	Type II	Industrial
12-Sep-16	Nexen Inc.	Fort McMurray	AB	Type II	Industrial
12-Sep-16	Nexen Inc.	Fort McMurray	AB	Type II	Industrial
12-Sep-16	Pembina Pipeline Corporation	Sherwood Park	AB	Type II	Industrial
13-Sep-16	Amgen British Columbia Inc.	Burnaby	BC	Type II	Medical
13-Sep-16	Canada Border Services Agency	Ottawa	ON	Type II	Industrial
13-Sep-16	Cenovus FCCL Ltd.	Calgary	AB	Type II	Industrial
13-Sep-16	Corporation Cott	Pointe-Claire	QC	Type II	Industrial
13-Sep-16	Dominion Diamond Ekati Corporation	Yellowknife	NT	Type II	Industrial
13-Sep-16	GeoPacific Consultants Ltd.	Vancouver	BC	Type II	Industrial
13-Sep-16	Royal Inland Hospital	Kamloops	BC	Type II	Medical
13-Sep-16	Royal Inland Hospital	Kamloops	BC	Type II	Medical
13-Sep-16	St. Joseph's Health Centre	Toronto	ON	Type II	Medical
13-Sep-16	St. Joseph's Health Centre	Toronto	ON	Type II	Medical
13-Sep-16	Stuart Hunt & Associates Ltd.	St Albert	AB	Type II	Commercial
13-Sep-16	Tetra Tech EBA Inc.	Calgary	AB	Type II	Industrial
13-Sep-16	UTC Fire & Security Canada Inc. operating as Chubb Edwards	Mississauga	ON	Type II	Commercial
14-Sep-16	Advance Testing Ltd.	Surrey	BC	Type II	Industrial
14-Sep-16	Chung & Vander Doelen Engineering Ltd.	Kitchener	ON	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
14-Sep-16	Devon Canada Corporation	Calgary	AB	Type II	Industrial
14-Sep-16	Devon Canada Corporation	Calgary	AB	Type II	Industrial
14-Sep-16	Devon Canada Corporation	Calgary	AB	Type II	Industrial
14-Sep-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
14-Sep-16	Health Canada / Santé Canada	Ottawa	ON	Type II	Academic & research
14-Sep-16	Honeywell Ltd	Lachine	QC	Type II	Commercial
14-Sep-16	Les entreprises Rolland inc.	St-Jérôme	QC	Type II	Industrial
14-Sep-16	New Gold Inc.	Kamloops	BC	Type II	Industrial
14-Sep-16	New Gold Inc.	Kamloops	BC	Type II	Industrial
14-Sep-16	Peto MacCallum Ltd.	Kitchener	ON	Type II	Industrial
14-Sep-16	Stantec Consulting Ltd.	Barrie	ON	Type II	Industrial
14-Sep-16	Tetra Tech EBA Inc.	Calgary	AB	Type II	Industrial
15-Sep-16	4338626 Canada Inc.	Montréal	QC	Type II	Industrial
15-Sep-16	British Columbia Cancer Agency	Vancouver	BC	Type II	Medical
15-Sep-16	British Columbia Cancer Agency	Vancouver	BC	Type II	Medical
15-Sep-16	British Columbia Cancer Agency	Vancouver	BC	Type II	Medical
15-Sep-16	Cave Inspection Ltd.	Kitscoty	AB	Type II	Industrial
15-Sep-16	City of Vancouver	Vancouver	BC	Type II	Industrial
15-Sep-16	Dawson Construction Limited	Kamloops	BC	Type II	Industrial
15-Sep-16	Edge Wireline Inc.	Red Deer	AB	Type II	Industrial
15-Sep-16	JTI-Macdonald Corp.	Montréal	QC	Type II	Industrial
15-Sep-16	Logco Wireline Services Ltd.	Calmar	AB	Type II	Industrial
15-Sep-16	Mistras Canada, Inc.	Olds	AB	Type II	Industrial
15-Sep-16	Steed and Evans Limited	St Jacobs	ON	Type II	Industrial
15-Sep-16	Stuart Hunt & Associates Ltd.	St Albert	AB	Type II	Commercial
15-Sep-16	Terracon Geotechnique Ltd.	Fort McMurray	AB	Type II	Industrial
15-Sep-16	Terracon Geotechnique Ltd.	Fort McMurray	AB	Type II	Industrial
16-Sep-16	Cave Inspection Ltd.	Kitscoty	AB	Type II	Industrial
16-Sep-16	Collège Ahuntsic	Montréal	QC	Type II	Industrial
16-Sep-16	Collège Ahuntsic	Montréal	QC	Type II	Academic & research
16-Sep-16	Collège Ahuntsic	Montréal	QC	Type II	Industrial
16-Sep-16	Collège Ahuntsic	Montréal	QC	Type II	Academic & research
16-Sep-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
16-Sep-16	Schlumberger Canada Limited	Calgary	AB	Type II	Industrial
16-Sep-16	Schlumberger Canada Limited	Calgary	AB	Type II	Industrial
16-Sep-16	Triquest Nondestructive Testing Corp.	Calgary	AB	Type II	Industrial
16-Sep-16	Triquest Nondestructive Testing Corp.	Calgary	AB	Type II	Industrial
19-Sep-16	Foothills Radiography	Edson	AB	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
19-Sep-16	Nortech Advanced N.D.T. Ltd.	Sherwood Park	AB	Type II	Industrial
19-Sep-16	Nortech Advanced N.D.T. Ltd.	Sherwood Park	AB	Type II	Industrial
19-Sep-16	Nortech Advanced N.D.T. Ltd.	Sherwood Park	AB	Type II	Industrial
19-Sep-16	P. Machibroda Engineering Ltd.	Saskatoon	SK	Type II	Industrial
19-Sep-16	Thurber Engineering Ltd.	Calgary	AB	Type II	Industrial
19-Sep-16	Weatherford Canada Ltd.	Calgary	AB	Type II	Industrial
19-Sep-16	Weatherford Canada Ltd.	Calgary	AB	Type II	Industrial
19-Sep-16	Weatherford Canada Partnership	Calgary	AB	Type II	Industrial
20-Sep-16	Black Creek Well Service Inc.	Oil Springs	ON	Type II	Industrial
20-Sep-16	Bluewater Health	Sarnia	ON	Type II	Medical
20-Sep-16	Centre Hospitalier de l'Université de Montréal	Montréal	QC	Type II	Medical
20-Sep-16	Centre Hospitalier de l'Université de Montréal	Montréal	QC	Type II	Medical
20-Sep-16	Centre Hospitalier de l'Université de Montréal	Montréal	QC	Type II	Medical
20-Sep-16	Centre hospitalier de l'Université de Montréal	Montréal	QC	Type II	Medical
20-Sep-16	City of Ottawa / Ville d'Ottawa	Ottawa	ON	Type II	Industrial
20-Sep-16	Englobe Corp.	Laval	QC	Type II	Industrial
20-Sep-16	Englobe Corp.	Laval	QC	Type II	Industrial
20-Sep-16	Foothills Radiography	Edson	AB	Type II	Industrial
20-Sep-16	Imperial Oil Limited/ Compagnie Pétrolière Impériale Ltée	Edmonton	AB	Type II	Industrial
20-Sep-16	Innotech Inspection Solutions Ltd.	Sherwood Park	AB	Type II	Industrial
20-Sep-16	P. Machibroda Engineering Ltd.	Saskatoon	SK	Type II	Industrial
20-Sep-16	Prairie Mines & Royalty ULC	Edson	AB	Type II	Industrial
20-Sep-16	Prairie Mines & Royalty ULC	Edson	AB	Type II	Industrial
20-Sep-16	Saskatchewan Ministry of Highways and Infrastructure	Saskatoon	SK	Type II	Industrial
20-Sep-16	Westcoast Energy Inc.	Fort St. John	BC	Type II	Industrial
20-Sep-16	Westcoast Energy Inc.	Fort St. John	BC	Type II	Industrial
20-Sep-16	Westcoast Energy Inc.	Calgary	AB	Type II	Industrial
21-Sep-16	Agrium Inc.	Fort Saskatchewan	AB	Type II	Industrial
21-Sep-16	All Can Inspection Services (2011) Inc.	Edmonton	AB	Type II	Industrial
21-Sep-16	Amec Foster Wheeler Americas Limited / Amec Foster Wheeler A	Lloydminster	AB	Type II	Industrial
21-Sep-16	Baker Hughes Canada Company	Leduc	AB	Type II	Industrial
21-Sep-16	Carp Road Animal Hospital	Stittsville	ON	Type II	Medical
21-Sep-16	Grande Cache Coal Corporation	Grande Cache	AB	Type II	Industrial
21-Sep-16	IRISNDT Corp.	Edmonton	AB	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
21-Sep-16	IRISNDT Corp.	Edmonton	AB	Type II	Industrial
21-Sep-16	Medical Imaging Centres Inc.	Mississauga	ON	Type II	Medical
21-Sep-16	Milner Power Inc.	Grande Cache	AB	Type II	Industrial
21-Sep-16	Nortech Advanced N.D.T. Ltd.	Sherwood Park	AB	Type II	Industrial
21-Sep-16	Parkland Geotechnical Consulting Ltd.	Red Deer	AB	Type II	Industrial
21-Sep-16	Potash Corporation of Saskatchewan Inc.	Saskatoon	SK	Type II	Industrial
22-Sep-16	AltaSteel Ltd.	Edmonton	AB	Type II	Industrial
22-Sep-16	Baker Hughes Canada Company	Calgary	AB	Type II	Industrial
22-Sep-16	Cal Frac Well Services Ltd.	Calgary	AB	Type II	Industrial
22-Sep-16	Cal Frac Well Services Ltd.	Calgary	AB	Type II	Industrial
22-Sep-16	Cody Last	Dawson Creek	BC	Type II	Industrial
22-Sep-16	Enbridge Employee Services Canada Inc.	Edmonton	AB	Type II	Industrial
22-Sep-16	Enbridge Employee Services Canada Inc.	Edmonton	AB	Type II	Industrial
22-Sep-16	Enbridge Employee Services Canada Inc.	Edmonton	AB	Type II	Industrial
22-Sep-16	Enbridge Employee Services Canada Inc.	Edmonton	AB	Type II	Industrial
22-Sep-16	Nortech Advanced N.D.T. Ltd.	Sherwood Park	AB	Type II	Industrial
22-Sep-16	Potash Corporation of Saskatchewan Inc.	Saskatoon	SK	Type II	Industrial
22-Sep-16	Potash Corporation of Saskatchewan Inc.	Saskatoon	SK	Type II	Industrial
22-Sep-16	Trican Well Service Ltd.	Calgary	AB	Type II	Industrial
23-Sep-16	Alara Consultants Inc.	Edmonton	AB	Type II	Commercial
23-Sep-16	Alara Consultants Inc.	Edmonton	AB	Type II	Commercial
23-Sep-16	Cancer Imaging Services	Edmonton	AB	Type II	Academic & research
23-Sep-16	Cancer Imaging Services	Edmonton	AB	Type II	Medical
26-Sep-16	Centre Hospitalier de l'Université de Montréal	Montréal	QC	Type II	Medical
26-Sep-16	Parkland Geotechnical Consulting Ltd.	Red Deer	AB	Type II	Industrial
27-Sep-16	Milestone Engineering Services Ltd.	Wabasca	AB	Type II	Industrial
27-Sep-16	Tuboscope Vetco Canada ULC	Nisku	AB	Type II	Industrial
28-Sep-16	Daishowa-Marubeni International Limited	Peace River	AB	Type II	Industrial
28-Sep-16	Thurber Engineering Ltd.	Calgary	AB	Type II	Industrial
28-Sep-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
28-Sep-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
29-Sep-16	IRISNDT Corp.	Edmonton	AB	Type II	Industrial
29-Sep-16	Thurber Engineering Ltd.	Calgary	AB	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
29-Sep-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
3-Oct-16	RTD Quality Services Inc.	Burlington	ON	Type II	Industrial
3-Oct-16	SGS Canada Inc.	Lakefield	ON	Type II	Industrial
3-Oct-16	TISI Canada Inc.	Oakville	ON	Type II	Industrial
4-Oct-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
4-Oct-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
4-Oct-16	All Test International Inc.	Brooks	AB	Type II	Industrial
4-Oct-16	AVC Clinics BC Ltd.	Victoria	BC	Type II	Medical
4-Oct-16	Cargill Limited	Clavet	SK	Type II	Industrial
4-Oct-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
4-Oct-16	Mosaic Potash Colonsay ULC	Colonsay	SK	Type II	Industrial
4-Oct-16	RTD Quality Services Inc.	Burlington	ON	Type II	Industrial
4-Oct-16	Samuel, Son & Co. Limited	Stoney Creek	ON	Type II	Industrial
4-Oct-16	Sunshine Oilsands Ltd.	Calgary	AB	Type II	Industrial
4-Oct-16	Vancouver Island Health Authority	Victoria	BC	Type II	Medical
4-Oct-16	Vancouver Island Health Authority	Victoria	BC	Type II	Medical
4-Oct-16	WAV Inspection Ltd.	Brooks	AB	Type II	Industrial
5-Oct-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
5-Oct-16	Bailey Metal Processing Ltd.	Concord	ON	Type II	Industrial
5-Oct-16	Canadian Natural Resources Limited	Fort McMurray	AB	Type II	Industrial
5-Oct-16	Canadian Natural Resources Limited	Fort McMurray	AB	Type II	Industrial
5-Oct-16	Ceda General Partners Ltd.	Sherwood Park	AB	Type II	Industrial
5-Oct-16	Endeavour Inspection Ltd.	Fort McMurray	AB	Type II	Industrial
5-Oct-16	Environment Canada	Saskatoon	SK	Type II	Academic & research
5-Oct-16	TISI Canada Inc.	Oakville	ON	Type II	Industrial
5-Oct-16	TISI Canada Inc.	Oakville	ON	Type II	Industrial
5-Oct-16	Vancouver Island Health Authority	Victoria	BC	Type II	Medical
6-Oct-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
6-Oct-16	AM Inspection Limited	Cabri	SK	Type II	Industrial
6-Oct-16	ArcelorMittal Canada Inc.	Hamilton	ON	Type II	Industrial
6-Oct-16	ArcelorMittal Canada Inc.	Hamilton	ON	Type II	Commercial
6-Oct-16	Buffalo Inspection Services (2005) Inc.	Edmonton	AB	Type II	Industrial
6-Oct-16	Buffalo Inspection Services (2005) Inc.	Edmonton	AB	Type II	Industrial
6-Oct-16	Cave Inspection Inc	Wainwright	AB	Type II	Industrial
6-Oct-16	Chemtrade Fort McMurray GP Inc.	Fort Saskatchewan	AB	Type II	Industrial
6-Oct-16	Metalcare Group Inc.	Fort McMurray	AB	Type II	Industrial
6-Oct-16	Metro Testing Laboratories Ltd.	Burnaby	BC	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
6-Oct-16	SNC-Lavalin GEM Québec Inc.	Montréal	QC	Type II	Industrial
6-Oct-16	Sweetcroft Engineering Consultants Ltd.	Caraquet	NB	Type II	Industrial
6-Oct-16	Terracon Geotechnique Ltd.	Fort McMurray	AB	Type II	Industrial
6-Oct-16	Terracon Geotechnique Ltd.	Fort McMurray	AB	Type II	Industrial
6-Oct-16	Terracon Geotechnique Ltd.	Fort McMurray	AB	Type II	Industrial
7-Oct-16	1424624 Ontario Inc.	Milton	ON	Type II	Medical
7-Oct-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
7-Oct-16	Endeavour Inspection Ltd.	Fort McMurray	AB	Type II	Industrial
7-Oct-16	Pinter & Associates Ltd.	Saskatoon	SK	Type II	Industrial
7-Oct-16	Pinter & Associates Ltd.	Saskatoon	SK	Type II	Industrial
7-Oct-16	University of Alberta	Edmonton	AB	Type I	Commercial
7-Oct-16	University of Victoria	Victoria	BC	Type II	Academic & research
7-Oct-16	University of Victoria	Victoria	BC	Type II	Academic & research
7-Oct-16	University of Victoria	Victoria	BC	Type II	Academic & research
12-Oct-16	Superior Metal Processing	Cambridge	ON	Type II	Industrial
14-Oct-16	Voith Canada Inc.	Hawkesbury	ON	Type II	Industrial
17-Oct-16	Nine Energy Canada Inc.	Clairmont	AB	Type II	Industrial
18-Oct-16	Atomic Inspection Services Ltd.	Fort St. John	BC	Type II	Industrial
18-Oct-16	Glencore Canada Corporation	Onaping	ON	Type II	Industrial
18-Oct-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
18-Oct-16	Interpaving Asphalt and Aggregate Supply Ltd.	Garson	ON	Type II	Industrial
18-Oct-16	Mevex Corporation	Stittsville	ON	Type II	Commercial
18-Oct-16	Natural Resources Canada/ Ressources naturelles Canada	Ottawa	ON	Type II	Academic & research
18-Oct-16	Sabia, Inc.	San Diego	CA	Type II	Commercial
19-Oct-16	860851 Alberta Ltd.	Edmonton	AB	Type II	Industrial
19-Oct-16	Aecom Canada Ltd.	Edmonton	AB	Type II	Industrial
19-Oct-16	Aecon Construction and Materials Limited	Caledon	ON	Type II	Industrial
19-Oct-16	Atomic NDT Ltd.	Edmonton	AB	Type II	Industrial
19-Oct-16	Buffalo Inspection Services (2005) Inc.	Edmonton	AB	Type II	Industrial
19-Oct-16	Les Mines Agnico-Eagle Ltée / Agnico-Eagle Mines Ltd.	Baker Lake	NU	Type II	Industrial
19-Oct-16	Owl Inspection Services Ltd.	Fort St. John	BC	Type II	Industrial
19-Oct-16	Shawcor Ltd./Shawcor Ltée	Nisku	AB	Type II	Industrial
20-Oct-16	Deka Inspection Services Ltd.	Fort St. John	BC	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
20-Oct-16	EXP Services Inc. / Les Services EXP Inc.	Laval	QC	Type II	Industrial
20-Oct-16	GHD Consultants Ltd.	Montréal	QC	Type II	Industrial
20-Oct-16	Hartstone Inc.	Okotoks	AB	Type II	Industrial
20-Oct-16	Labo S.M. Inc.	Longueuil	QC	Type II	Industrial
20-Oct-16	MNA Engineering Ltd.	Scarborough	ON	Type II	Industrial
20-Oct-16	Spectrum NDT Ltd.	Calgary	AB	Type II	Industrial
20-Oct-16	Willow Creek Coal Ltd.	Tumbler Ridge	BC	Type II	Industrial
21-Oct-16	British Columbia Cancer Agency	Abbotsford	BC	Type I	Medical
21-Oct-16	British Columbia Cancer Agency	Abbotsford	BC	Type II	Medical
21-Oct-16	British Columbia Cancer Agency	Abbotsford	BC	Type II	Medical
22-Oct-16	Advance Testing Ltd.	Surrey	BC	Type II	Industrial
24-Oct-16	Mosaic Canada ULC	Regina	SK	Type II	Industrial
24-Oct-16	Mosaic Canada ULC	Regina	SK	Type II	Industrial
24-Oct-16	Mosaic Canada ULC	Regina	SK	Type II	Industrial
24-Oct-16	The University Hospital of Northern British Columbia,	Prince George	BC	Type II	Medical
24-Oct-16	Yara Belle Plaine Inc.	Belle Plaine	SK	Type II	Industrial
25-Oct-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
25-Oct-16	Canfor Pulp Ltd.	Prince George	BC	Type II	Industrial
25-Oct-16	Institut national de la recherche scientifique	Laval	QC	Type II	Academic & research
25-Oct-16	Institut national de la recherche scientifique	Laval	QC	Type II	Academic & research
25-Oct-16	Institut national de la recherche scientifique	Laval	QC	Type II	Medical
25-Oct-16	Regina Qu'Appelle Health Region	Regina	SK	Type II	Medical
25-Oct-16	Regina Qu'Appelle Health Region	Regina	SK	Type II	Medical
25-Oct-16	Regina Qu'Appelle Health Region	Regina	SK	Type II	Medical
25-Oct-16	Regina Qu'Appelle Health Region	Regina	SK	Type II	Medical
25-Oct-16	University of Regina	Regina	SK	Type II	Academic & research
25-Oct-16	University of Regina	Regina	SK	Type II	Academic & research
25-Oct-16	University of Regina	Regina	SK	Type II	Academic & research
25-Oct-16	Vancouver Coastal Health Authority	Vancouver	BC	Type II	Medical
25-Oct-16	Vancouver Coastal Health Authority	Vancouver	BC	Type II	Medical
25-Oct-16	Vancouver Coastal Health Authority	Vancouver	BC	Type II	Medical
25-Oct-16	Vancouver Coastal Health Authority	Vancouver	BC	Type II	Medical
25-Oct-16	Vancouver Coastal Health	Vancouver	BC	Type II	Medical

Inspection date	Licensee name	City	Province	Inspection type	Sector
	Authority				
25-Oct-16	Vancouver Coastal Health Authority	Vancouver	BC	Type II	Medical
26-Oct-16	Asphalte, Béton, Carrières Rive-Nord Inc.	Mirabel	QC	Type II	Industrial
26-Oct-16	Cariboo Pulp & Paper Company	Quesnel	BC	Type II	Industrial
26-Oct-16	Carleton University	Ottawa	ON	Type II	Academic & research
26-Oct-16	Carleton University	Ottawa	ON	Type II	Academic & research
26-Oct-16	Carleton University	Ottawa	ON	Type II	Academic & research
26-Oct-16	Carleton University	Ottawa	ON	Type II	Academic & research
26-Oct-16	Carleton University	Ottawa	ON	Type II	Academic & research
26-Oct-16	Carleton University	Ottawa	ON	Type II	Academic & research
26-Oct-16	Carleton University	Ottawa	ON	Type II	Academic & research
26-Oct-16	Carleton University	Ottawa	ON	Type II	Academic & research
26-Oct-16	Cascades Canada ULC	Kingsey Falls	QC	Type II	Industrial
26-Oct-16	Clifton Associates Ltd.	Regina	SK	Type II	Industrial
26-Oct-16	Coco Paving (1990) Inc.	Tecumseh	ON	Type II	Industrial
26-Oct-16	Consumers' Co-Operative Refineries Ltd.	Regina	SK	Type II	Industrial
26-Oct-16	Consumers' Co-operative Refineries Ltd.	Regina	SK	Type II	Industrial
26-Oct-16	Groupe ABS Inc.	St-Rémi	QC	Type II	Industrial
26-Oct-16	Honeywell Ltd	Lachine	QC	Type II	Commercial
26-Oct-16	Hôpital Shriners pour l'Enfant/ Shriners Hospital for Children	Montréal	QC	Type II	Academic & research
26-Oct-16	Horizon Engineering Inc.	North Vancouver	BC	Type II	Industrial
26-Oct-16	Horizon Engineering Inc.	North Vancouver	BC	Type II	Industrial
26-Oct-16	Husky Oil Operations Limited	Prince George	BC	Type II	Industrial
26-Oct-16	Metro Testing Laboratories Ltd.	Burnaby	BC	Type II	Industrial
26-Oct-16	Quesnel River Pulp Company	Quesnel	BC	Type II	Industrial
26-Oct-16	Samuel, Son & Co. Limited	Stoney Creek	ON	Type II	Industrial
26-Oct-16	Samuel, Son & Co. Limited	Stoney Creek	ON	Type II	Industrial
26-Oct-16	TISI Canada Inc.	Oakville	ON	Type II	Industrial
27-Oct-16	Allnorth Consultants Limited	Terrace	BC	Type II	Industrial
27-Oct-16	AM Inspection Limited	Cabri	SK	Type II	Industrial
27-Oct-16	AR Geotechnical Engineering Ltd.	Medicine Hat	AB	Type II	Industrial
27-Oct-16	Centre intégré de santé et de services sociaux de la Montérégie-Est	St-Hyacinthe	QC	Type II	Medical

Inspection date	Licensee name	City	Province	Inspection type	Sector
27-Oct-16	Centre intégré de santé et de services sociaux de la Montérégie-Est	St-Hyacinthe	QC	Type II	Medical
27-Oct-16	DWB Consulting Services Ltd.	Prince George	BC	Type II	Industrial
27-Oct-16	Metro Testing Laboratories Ltd.	Burnaby	BC	Type II	Industrial
28-Oct-16	Slick Inspection Limited	Medicine Hat	AB	Type II	Industrial
30-Oct-16	Solmatech Inc.	Le Gardeur	QC	Type II	Industrial
31-Oct-16	Aurora Inspection Limited	Sexsmith	AB	Type II	Industrial
31-Oct-16	Reliance OFS Canada Ltd.	Blackfalds	AB	Type II	Industrial
31-Oct-16	WSP Canada Inc.	Red Deer	AB	Type II	Industrial
1-Nov-16	Atlas Testing Labs & Services (Nova Scotia) Ltd.	Salt Springs	NS	Type II	Industrial
1-Nov-16	City of Estevan	Estevan	SK	Type II	Industrial
1-Nov-16	City of Windsor	Windsor	ON	Type II	Industrial
1-Nov-16	Dalhousie University	Halifax	NS	Type II	Academic & research
1-Nov-16	Dalhousie University	Halifax	NS	Type II	Academic & research
1-Nov-16	EXP Services Inc.	Brampton	ON	Type II	Industrial
1-Nov-16	G.B. Contract Inspection Ltd.	Estevan	SK	Type II	Industrial
1-Nov-16	G.B. Contract Inspection Ltd.	Estevan	SK	Type II	Industrial
1-Nov-16	GHD Consultants Ltd.	Montréal	QC	Type II	Industrial
1-Nov-16	Oshaneck Inspection Services (1972) Ltd.	Spruce Grove	AB	Type II	Industrial
1-Nov-16	Scapa Tapes North America Ltd.	Renfrew	ON	Type II	Industrial
1-Nov-16	SNC-Lavalin Inc.	Saskatoon	SK	Type II	Industrial
1-Nov-16	Tomahawk Inspection Inc.	Weyburn	SK	Type II	Industrial
1-Nov-16	Tomahawk Inspection Inc.	Weyburn	SK	Type II	Industrial
2-Nov-16	Acuren Inc.	Edmonton	AB	Type II	Industrial
2-Nov-16	Acuren Inc.	Regina	SK	Type II	Industrial
2-Nov-16	ADM Agri-Industries Company	Windsor	ON	Type II	Industrial
2-Nov-16	AM Inspection Limited	Cabri	SK	Type II	Industrial
2-Nov-16	AM Inspection Limited	Weyburn	SK	Type II	Industrial
2-Nov-16	Bonnett's Energy Services Ltd.	Grande Prairie	AB	Type II	Industrial
2-Nov-16	Brick Brewing Co. Limited	Kitchener	ON	Type II	Industrial
2-Nov-16	Cegep de Sainte-Foy	Quebec	QC	Type II	Medical
2-Nov-16	Coco Paving (1990) Inc.	Tecumseh	ON	Type II	Industrial
2-Nov-16	DJ Galvanizing Corporation	Windsor	ON	Type II	Industrial
2-Nov-16	Michelin North America (Canada) Inc.	New Glasgow	NS	Type II	Industrial
2-Nov-16	Nova Scotia Power Incorporated	Sydney	NS	Type II	Industrial
2-Nov-16	Nova Scotia Power Incorporated	Trenton	NS	Type II	Industrial
2-Nov-16	Ray-Tech Inspection Inc.	Beaverlodge	AB	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
3-Nov-16	ALSTOM Power Canada Inc.	New Waterford	NS	Type II	Industrial
3-Nov-16	AM Inspection Limited	Cabri	SK	Type II	Industrial
3-Nov-16	Brody Inspection Ltd.	Valleyview	AB	Type II	Industrial
3-Nov-16	Centre hospitalier de l'Université de Montréal	Montréal	QC	Type II	Medical
3-Nov-16	Coco Paving (1990) Inc.	Tecumseh	ON	Type II	Industrial
3-Nov-16	EXP Services Inc.	Fredericton	NB	Type II	Industrial
3-Nov-16	EXP Services Inc.	Fredericton	NB	Type II	Industrial
3-Nov-16	FB Nondestructive Examination Ltd.	Moose Jaw	SK	Type II	Industrial
3-Nov-16	FB Nondestructive Examination Ltd.	Moose Jaw	SK	Type II	Industrial
3-Nov-16	Golder Associates Ltd.	Mississauga	ON	Type II	Industrial
3-Nov-16	Knight Vision Inspections Inc.	Regina	SK	Type II	Industrial
3-Nov-16	Knight Vision Inspections Inc.	Regina	SK	Type II	Industrial
3-Nov-16	Riverview Steel Co. Ltd.	Windsor	ON	Type II	Industrial
4-Nov-16	S.G.H. Inspection Ltd.	Grovedale	AB	Type II	Industrial
7-Nov-16	Centre Intégré de Santé et de Services Sociaux de Laval	Laval	QC	Type II	Medical
7-Nov-16	Magna Exteriors Inc.	Guelph	ON	Type II	Industrial
8-Nov-16	Shell Lubricants	Brockville	ON	Type II	Industrial
8-Nov-16	University of Ottawa	Ottawa	ON	Type II	Academic & research
14-Nov-16	GHD Consultants Ltd.	Montréal	QC	Type II	Industrial
14-Nov-16	Les Pavages des Monts Inc.	Matane	QC	Type II	Industrial
14-Nov-16	University of Winnipeg	Winnipeg	MB	Type II	Academic & research
14-Nov-16	University of Winnipeg	Winnipeg	MB	Type II	Academic & research
15-Nov-16	College of the North Atlantic	Burin	NL	Type II	Industrial
15-Nov-16	College of the North Atlantic	Port aux Basques	NL	Type II	Industrial
15-Nov-16	Les Entreprises Mont Sterling Inc.	Sainte-Anne-des-Monts	QC	Type II	Industrial
15-Nov-16	Nuclear Management Co. Ltd.	Winnipeg	MB	Type II	Medical
15-Nov-16	Saskatchewan Power Corporation	Regina	SK	Type II	Industrial
15-Nov-16	Saskatchewan Power Corporation	Regina	SK	Type II	Industrial
15-Nov-16	Tembec Enterprises Inc./ Les Entreprises Tembec Inc.	Matane	QC	Type II	Industrial
15-Nov-16	University of Manitoba	Winnipeg	MB	Type II	Academic & research
15-Nov-16	Winpak Ltd.	Winnipeg	MB	Type II	Industrial
16-Nov-16	CancerCare Manitoba	Winnipeg	MB	Type II	Commercial
16-Nov-16	CancerCare Manitoba	Winnipeg	MB	Type II	Medical

Inspection date	Licensee name	City	Province	Inspection type	Sector
16-Nov-16	CancerCare Manitoba	Winnipeg	MB	Type II	Commercial
16-Nov-16	Centre de santé et de services sociaux de la Côte-de-Gaspé	Gaspé	QC	Type II	Medical
16-Nov-16	Centre de santé et de services sociaux du Rocher-Percé	Chandler	QC	Type II	Medical
16-Nov-16	Centre intégré de santé et de services sociaux de la Gaspésie	Chandler	QC	Type II	Medical
16-Nov-16	Clifton Associates Ltd.	Regina	SK	Type II	Industrial
16-Nov-16	Construction DJL Inc./	Boucherville	QC	Type II	Industrial
16-Nov-16	Element Technical Services Inc.	Carlyle	SK	Type II	Industrial
16-Nov-16	Evraz Inc. NA Canada	Regina	SK	Type II	Industrial
16-Nov-16	Fisheries and Oceans Canada	Sidney	BC	Type II	Academic & research
16-Nov-16	Manitoba Infrastructure	West St. Paul	MB	Type II	Industrial
16-Nov-16	Tomahawk Inspection Inc.	Weyburn	SK	Type II	Industrial
17-Nov-16	Centre intégré de santé et de services sociaux de la Gaspésie	Maria	QC	Type II	Medical
17-Nov-16	City of Winnipeg	Winnipeg	MB	Type II	Industrial
17-Nov-16	Construction DJL Inc./	Boucherville	QC	Type II	Industrial
17-Nov-16	Roke Technologies Ltd.	Calgary	AB	Type II	Industrial
17-Nov-16	Stantec Consulting Ltd.	Barrie	ON	Type II	Industrial
17-Nov-16	Tetra Tech EBA Inc.	Calgary	AB	Type II	Industrial
18-Nov-16	Clifton Associates Ltd.	Regina	SK	Type II	Industrial
18-Nov-16	Englobe Corp.	Laval	QC	Type II	Industrial
18-Nov-16	Groupe Lechasseur Ltée	Mont-Joli	QC	Type II	Industrial
18-Nov-16	Université de Montréal	Montreal	QC	Type II	Academic & research
19-Nov-16	Englobe Corp.	Laval	QC	Type II	Industrial
22-Nov-16	GeoPacific Consultants Ltd.	Vancouver	BC	Type II	Industrial
22-Nov-16	Schlumberger Canada Limited	Calgary	AB	Type II	Industrial
23-Nov-16	GeoPacific Consultants Ltd.	Vancouver	BC	Type II	Industrial
23-Nov-16	Landtek Limited	Hamilton	ON	Type II	Industrial
23-Nov-16	Quantum Petrophysics Inc.	Blackfalds	AB	Type II	Industrial
23-Nov-16	Trent University	Peterborough	ON	Type II	Academic & research
24-Nov-16	CGC Acquisition Corporation	Red Deer County	AB	Type II	Industrial
24-Nov-16	Health Science North	Sudbury	ON	Type II	Medical
24-Nov-16	Health Science North	Sudbury	ON	Type II	Medical
24-Nov-16	Hopital Maisonneuve-Rosemont	Montreal	QC	Type II	Medical
24-Nov-16	Hopital Maisonneuve-Rosemont	Montreal	QC	Type II	Medical
24-Nov-16	Johns Manville Canada Inc.	Innisfail	AB	Type II	Industrial
24-Nov-16	MyHealth Partners Inc.	Toronto	ON	Type II	Medical

Inspection date	Licensee name	City	Province	Inspection type	Sector
28-Nov-16	Goba Associates Ltd.	Oshawa	ON	Type II	Industrial
28-Nov-16	SNC-Lavalin GEM Québec Inc.	Montréal	QC	Type II	Industrial
28-Nov-16	SNC-Lavalin GEM Québec Inc.	Montréal	QC	Type II	Industrial
4-Dec-16	SNC-Lavalin GEM Québec Inc.	Montréal	QC	Type II	Industrial
5-Dec-16	Buffalo Inspection Services (2005) Inc.	Edmonton	AB	Type II	Industrial
5-Dec-16	Buffalo Inspection Services (2005) Inc.	Edmonton	AB	Type II	Industrial
5-Dec-16	Triquest Nondestructive Testing Corp.	Calgary	AB	Type II	Industrial
5-Dec-16	Triquest Nondestructive Testing Corp.	Calgary	AB	Type II	Industrial
6-Dec-16	Buffalo Inspection Services (2005) Inc.	Edmonton	AB	Type II	Industrial
6-Dec-16	Building Products of Canada Corp.	Edmonton	AB	Type II	Industrial
6-Dec-16	University of Alberta	Edmonton	AB	Type II	Academic & research
6-Dec-16	University of Alberta	Edmonton	AB	Type II	Academic & research
7-Dec-16	Alberta Health Services	Edmonton	AB	Type II	Medical
7-Dec-16	Alberta Health Services	Edmonton	AB	Type II	Medical
7-Dec-16	All Can Inspection Services (2011) Inc.	Edmonton	AB	Type II	Industrial
7-Dec-16	Ciment Québec Inc	Saint-Basile	QC	Type II	Industrial
7-Dec-16	Hexion Canada Inc.	Edmonton	AB	Type II	Industrial
7-Dec-16	PANalytical	Saint-Basile	QC	Type II	Commercial
8-Dec-16	Englobe Corp.	Laval	QC	Type II	Industrial
8-Dec-16	Insight Medical Holdings Ltd.	Edmonton	AB	Type II	Medical
8-Dec-16	RadTag Technologies Inc.	Edmonton	AB	Type II	Medical
8-Dec-16	Rivest Technologies Incorporated	Edmonton	AB	Type II	Industrial
8-Dec-16	Trillium Health Partners	Mississauga	ON	Type II	Medical
8-Dec-16	Trillium Health Partners	Mississauga	ON	Type II	Medical
9-Dec-16	Almadon Holdings Ltd.	Calgary	AB	Type II	Medical
12-Dec-16	Bruce Power Inc.	Tiverton	ON	Type II	Industrial
12-Dec-16	Bruce Power Inc.	Tiverton	ON	Type II	Industrial
12-Dec-16	Cal Frac Well Services Ltd.	Calgary	AB	Type II	Industrial
12-Dec-16	Logco Wireline Services Ltd.	Calmar	AB	Type II	Industrial
13-Dec-16	Alco Gas & Oil Production Equipment Ltd.	Edmonton	AB	Type II	Industrial
13-Dec-16	Anode NDT Ltd.	Grande Prairie	AB	Type II	Industrial
13-Dec-16	Centerline Geomatics Ltd.	Fort McMurray	AB	Type II	Industrial
13-Dec-16	Centerline Geomatics Ltd.	Fort McMurray	AB	Type II	Industrial
13-Dec-16	Covenant Health	Edmonton	AB	Type II	Medical
13-Dec-16	Fort McMurray Inspection and Testing Incorporated	Fort McMurray	AB	Type II	Industrial

Inspection date	Licensee name	City	Province	Inspection type	Sector
13-Dec-16	Fugro Canada Corp.	Calgary	AB	Type II	Industrial
13-Dec-16	Grey Nuns Community Health Centre	Edmonton	AB	Type II	Medical
13-Dec-16	Inspectrum Testing Inc.	Grande Prairie	AB	Type II	Industrial
13-Dec-16	Peter Kiewit Infrastructure Co.	Edmonton	AB	Type II	Industrial
14-Dec-16	20/20 ND Technology Inc.	Grande Prairie	AB	Type II	Industrial
14-Dec-16	Ceda General Partners Ltd.	Sherwood Park	AB	Type II	Industrial
14-Dec-16	Centre Hospitalier de l'Université de Montréal	Montréal	QC	Type II	Medical
14-Dec-16	Centre Hospitalier de l'Université de Montréal	Montréal	QC	Type II	Medical
14-Dec-16	Centre Hospitalier de l'Université de Montréal	Montréal	QC	Type II	Medical
14-Dec-16	Centre hospitalier de l'Université de Montréal	Montréal	QC	Type II	Medical
14-Dec-16	Duncan Geomatics & Consulting Ltd.	Fort McMurray	AB	Type II	Industrial
14-Dec-16	E2K Engineering Ltd.	Calgary	AB	Type II	Industrial
14-Dec-16	Gamma Spec NDT Ltd.	Grande Prairie	AB	Type II	Industrial
14-Dec-16	RTD Quality Services Inc.	Burlington	ON	Type II	Industrial
14-Dec-16	Ultratest N.D.T. Services (2010) Inc.	Edmonton	AB	Type II	Industrial
14-Dec-16	XE Inspection Inc.	Fort McMurray	AB	Type II	Industrial
15-Dec-16	Canadian Inspection Ltd.	Edmonton	AB	Type II	Industrial
15-Dec-16	GeoPro Consulting Limited	Richmond Hill	ON	Type II	Industrial
15-Dec-16	Intrepid NDE Testing Corp.	Grande Prairie	AB	Type II	Industrial
15-Dec-16	S.G.H. Inspection Ltd.	Grovedale	AB	Type II	Industrial
15-Dec-16	Sola Engineering Inc.	Vaughan	ON	Type II	Industrial
15-Dec-16	Suncor Energy Inc.	Calgary	AB	Type II	Industrial
15-Dec-16	Suncor Energy Inc.	Calgary	AB	Type II	Industrial
16-Dec-16	Inspectrum Testing Inc.	Grande Prairie	AB	Type II	Industrial
16-Dec-16	Recon Petrotechnologies Ltd.	Edmonton	AB	Type II	Industrial
20-Dec-16	Centre intégré de santé et de services	Lévis	QC	Type II	Medical
20-Dec-16	Centre intégré de santé et de services	Lévis	QC	Type II	Medical
20-Dec-16	Ministère des Transports, de la Mobilité durable et de l'Éle	Québec	QC	Type II	Industrial
20-Dec-16	Vale Newfoundland & Labrador Limited	Happy Valley-Goose Bay	NL	Type II	Industrial
21-Dec-16	Centre intégré de santé et de services sociaux de Chaudière-	Thetford-Mines	QC	Type II	Medical
21-Dec-16	Centre intégré de santé et de services sociaux de Chaudière-	Thetford-Mines	QC	Type II	Medical

Inspection date	Licensee name	City	Province	Inspection type	Sector
22-Dec-16	Alara Consultants Inc.	Edmonton	AB	Type II	Commercial
22-Dec-16	Uni-Vert Tech Inc.	Montréal	QC	Type II	Commercial
29-Dec-16	Ontario Power Generation Inc.	Whitby	ON	Type II	Industrial
29-Dec-16	Ontario Power Generation Inc.	Whitby	ON	Type II	Commercial

Appendix F: Compliance rating levels

The following rating levels, as shown in table 10, reflect the transition in rating terminology used by the CNSC. While inspection reports may still use the previous rating levels, licensees that use nuclear substances and radiation devices can expect this transition to take place in time.

Table 10: Compliance rating terminology

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

Fully satisfactory (FS)

Compliance with regulatory requirements is fully satisfactory. Compliance within the area exceeds requirements and CNSC expectations. Compliance is stable or improving, and any problems or issues that arise are promptly addressed.

Satisfactory (SA)

Compliance with regulatory requirements is satisfactory. Compliance within the area meets requirements and CNSC expectations. Any deviation is only minor, and any issues are considered to pose a low risk to the achievement of regulatory objectives and CNSC expectations. Appropriate improvements are planned.

Below expectations (BE)

Compliance with regulatory requirements falls below expectations. Compliance within the area deviates from requirements or CNSC expectations to the extent that there is a moderate risk of ultimate failure to comply. Improvements are required to address identified weaknesses. The licensee or applicant is taking appropriate corrective action.

Unacceptable (UA)

Compliance with regulatory requirements is unacceptable, and is seriously compromised. Compliance within the overall area is significantly below requirements or CNSC expectations, or there is evidence of overall non-compliance. Without corrective action, there is a high probability that the deficiencies will lead to unreasonable risk. Issues are not being addressed effectively, no appropriate corrective measures have been taken, and no alternative plan of action has been provided. Immediate action is required.

Appendix G: Grading Inspections

For all inspections, CNSC inspectors evaluate a licensee's performance against regulatory requirements found in the Nuclear Safety and Control Act, its regulations, and conditions included in the licensee's licence. During an inspection, the inspector verifies compliance with specific regulatory requirements and assigns a grade (i.e., a compliance rating) based on his or her observations. (Please refer to [appendix F](#) for information on the compliance ratings for inspection.) Each requirement is ranked according to the relative risk of the particular regulatory requirement: high, medium or low. The requirements are linked to a particular safety and control area (SCA), and each SCA has different numbers of requirements. The scope of the inspections determines which of the requirements are to be inspected. Please refer to [appendix B](#) for the list of all SCAs.

For the majority of licensees, inspection results are determined as follows:

- Inspection evidence is entered into a licensing and compliance system which uses a complex algorithm to calculate an overall grade for each SCA based on the inspector's grades.
- The SCA grade is based on the worst grade of the high-risk requirements. The SCA grade will be the lowest grade assigned to a high-risk requirement by an inspector, unless an unacceptable rating was assigned to a medium-risk requirement. In cases where a medium-risk requirement has been assessed as unacceptable, then the SCA grade will be one grade lower than the lowest grade assigned to high-risk requirement.
- If no high-risk requirements were inspected, then the SCA grade equals the worst grade from the medium-risk requirements.
- If no high-risk or medium-risk requirements were inspected, then no grade is assigned for that SCA. In other words, no SCA grade is assigned if the data comes from low-risk requirements only.

For inspections not recorded in the licensing and compliance system, inspectors review each compliance expectation and determine the overall rating of the SCA based on the magnitude of the non-compliances.

Figure 60 shows a blank inspection worksheet used by inspectors to conduct a compliance inspection. This worksheet is specific to the use of portable gauges. Figure 61 shows criteria that may be used in inspections of accelerators and Class II facilities.

Figure 60: Blank inspection worksheet

Canadian Nuclear Safety Commission / Commission canadienne de sûreté nucléaire

Abbreviations

RP - Radiation Protection
 SCA - Safety and Control Area
 LC - Licence Condition

GN - General Nuclear Safety and Control
 SSR-6 - IAEA Safety Standards 2012 Edition
 PTNS, 2015 - Packaging and Transport of Nuclear Substances, 2015
 TDG - Transport of Dangerous Goods Regulations

NSCA - Nuclear Safety and Control Act
 NSRD - Nuclear Substances and Radiation Devices
 CII - Class II Nuclear Facility and Prescribed Equipment

Type II Inspection Worksheet

Use Type: 811 - portable gauges

Licensee: _____ Report Number: _____
 Licence Number: _____ Inspection Date: _____
 Address: _____ Inspector Name: _____
 City: _____ Province: ON Postal Code: _____ Use Type Number: 811 (811)
 Person Seen: _____ Phone Number: _____ Risk Group: 2.00

Seq.	Description	Regulatory Requirements	Compliance Expectations	Risk
SCA: 1 Radiation Protection				
1	Storage	LC 2575-2	(a) Access to storage areas containing nuclear substances or radiation devices is restricted to authorized personnel. (b) Dose rates at occupied areas outside storage areas do not exceed 2.5 µSv/hr. (c) Dose limits are not exceeded as a result of nuclear substances or radiation devices in storage.	H
	Rating:	Comments:		
2	Meter calibrated	NSRD 20	Survey meter that is used has been calibrated within the previous twelve months of its use.	H
	Rating:	Comments:		
3	ALARA/RP program	RP 04 (a)	The licensee has implemented a radiation protection program that keeps doses ALARA and includes: (i) management control over work practices; (ii) personnel qualification and training; (iii) control of occupational and public exposure to radiation; and (iv) planning for unusual situations.	H
	Rating:	Comments:		
4	Ascertainment and recording of doses	RP 05	(1) Personnel doses are ascertained and recorded. (2) Doses are determined by (a) direct measurement or (b) estimation.	H
	Rating:	Comments:		
5	Dose limits/body	RP 13 (1)	Dose limits not exceeded.	H
	Rating:	Comments:		
6	Container/Device labelled	RP 20	Each container or device containing greater than one Exemption Quantity of nuclear substance(s) is labelled with the radiation warning symbol and the required wording.	H
	Rating:	Comments:		
7	Posting of Signs	RP 21	A radiation warning symbol is posted: (a) at the boundary of and at every point of access where there is more than 100 times the Exemption Quantity (EQ) of nuclear substances; or (b) where the radiation dose rate could exceed 0.025 m µSv/h.	H
	Rating:	Comments:		

SCA: 1 Radiation Protection				
8	Survey meter availability	LC 2922	Provisions have been made to ensure a survey meter can be available to workers at any site where a radiation device is used, within 2 hours.	M
	Rating:	Comments:		
9	Radiation Warning Sign	RP 22	When a radiation warning symbol is used, it is posted in accordance with regulations.	L
	Rating:	Comments:		
SCA: 2 Emergencies and Unplanned Events				
10	Reportable events	GN 29	Incidents and unplanned events have been immediately reported to the CNSC and a detailed written report was submitted within 21 days (refer to NSRD 38).	H
	Rating:	Comments:		
11	Device accidents	NSRD 21	Any radiation device involved in an accident or incident has been tested/inspected and confirmed to be functioning properly prior to return to use.	H
	Rating:	Comments:		
12	Field devices I.D.	NSRD 22	Device is labelled with contact information including a 24 hour telephone number.	H
	Rating:	Comments:		
13	Contact details posted	NSRD 23	The name or job title and a 24 hr. telephone number are posted in a readily visible location where the nuclear substance is stored or used (refer to RP 21).	H
	Rating:	Comments:		
14	Radiation safety	NSRD 17	Referenced emergency procedures are available to workers at the site of licensed activity.	M
	Rating:	Comments:		
15	Failed leak test	NSRD 18 (3)	Appropriate actions were taken upon detection of a leaking source.	M
	Rating:	Comments:		
16	Leak test/event	NSRD 18 (1) (c)	Leak testing was performed immediately after any event that may have damaged the sealed source(s).	L
	Rating:	Comments:		
SCA: 5 Training and Qualification				
17	Training and sufficient workers	GN 12 (1) (a), (b)	There are (a) a sufficient number of trained and (b) qualified workers to carry on licensed activity.	M
	Rating:	Comments:		
18	Nuclear Energy Workers informed	RP 07	(1) Each NEW has been informed in writing of their NEW designation, of the risks associated with their work, of the regulatory dose limits and of their individual dose. (2) Female NEW has been informed in writing of their rights (RP 07) and obligations (RP 11). (3) A signed acknowledgment form is available for each NEW.	M
	Rating:	Comments:		
SCA: 6 Operational Procedure				
19	Use of equipment & procedures	GN 12 (1) (e)	Licensee ensures equipment, clothing and procedures are used appropriately at the site of the licensed activity.	H
	Rating:	Comments:		
20	Authorized transfer	GN 13	All transfers of nuclear substances or radiation devices have been done to authorized licensees.	H
	Rating:	Comments:		

SCA: 6 Operational Procedure				
21	Worker's obligations	GN 17	"Every worker: (a) uses equipment, devices, facilities and clothing in a responsible and reasonable manner in accordance with the Act, Regulations and Licence Conditions; (b) complies with procedures and measures established by the licensee; (c) informs the licensee or supervisor of any situation where there may be: (i) an increase in the risk to the environment or the health and safety of persons; (ii) a threat to security; (iii) a failure to comply with regulatory requirements; (iv) sabotage, theft, loss or illegal use or possession of prescribed equipment, or (v) a release into the environment not authorized by the licence; (d) observes and obeys all notices and warning signs; and (e) takes all reasonable precautions to ensure the safety and security of individuals, the environment and the nuclear substances or facilities. "	H
	Rating:	Comments:		
22	Import Export Restrictions	LC 2480	The licensee is not authorized to import or export all items described in the schedule, Parts A and B, of the Nuclear Non-proliferation Import and Export Control Regulations, and specifically listed in the licence condition.	H
	Rating:	Comments:		
23	Device certification and transfer	NSRD 11	(1) The radiation device in use is a certified model (unless authorized in the licence). (2) The radiation device transferred to other licensees is a certified model.	H
	Rating:	Comments:		
24	Licensed dosimetry	RP 08	A licensed dosimetry service is used where the effective dose of a NEW will likely exceed 5 mSv in a one-year period.	H
	Rating:	Comments:		
25	Device provided & maintained	GN 12 (1) (d)	Required devices have been provided and have been maintained according to manufacturer's instruction.	M
	Rating:	Comments:		
26	Maintenance limitations	LC 2093-0	Maintenance is limited to cleaning and lubrication in accordance with the manufacturer's instructions.	M
	Rating:	Comments:		
27	Inventory	NSRD 36 (1) (a)	A complete nuclear substance and radiation device inventory is available.	M
	Rating:	Comments:		
28	Worker records retained	NSRD 36 (1) (b), (d), (2)	(1)(b) The name of each worker who handles nuclear substances and/or radiation devices is recorded. (1)(d) Training records for all workers who handle nuclear substances and/or radiation devices are available. (2) Worker training records are kept on file for three years after termination.	M
	Rating:	Comments:		
29	Post licence	GN 14	"(1) A copy of the licence or an appropriate notice is posted in a conspicuous place at the site of the licensed activity. (2) The complete licence is available at field locations. "	L
	Rating:	Comments:		
30	Records retained	GN 28	(2) The CNSC was notified 90 days prior to the disposal of any prescribed records.	L
	Rating:	Comments:		
31	Operation Limitations - General	LC 2917	Activities and procedures, as listed in the licence appendix, are followed.	L
	Rating:	Comments:		

SCA: 6 Operational Procedure				
32	Inaccuracies Notification Rating:	LC 2920-6 Comments:	Changes to documents listed in the licence appendix have been reported to the CNSC.	L
33	Leak test Rating:	NSRD 18 (1) (a), (b), (d) Comments:	Leak testing is performed at the required frequency following acceptable procedures.	L
34	Transfer documents Rating:	NSRD 19 Comments:	(1) A copy of the most recent leak test result is provided for all transfers of radiation devices as well as instructions to follow in the event of an accident. (2) A copy of the most recent leak test result is provided for all transfers of sealed source or nuclear substance used as shielding.	L
35	Records retained Rating:	NSRD 36 (1) (c), (e), (3), (4) Comments:	(1)(c) Records of transfer, receipt, disposal and abandonment are available. (1)(e) Records of inspection, measurement, test and servicing are available. (3), (4) Records of inspection, measurement, test and servicing are kept on file for three years.	L
36	Frivolous posting of signs Rating:	RP 23 Comments:	Radiation warning symbols are not posted where there is no radiation, nuclear substance or prescribed equipment.	L
37	List of NEWs Rating:	RP 24 Comments:	A record including names and job category of each NEW is available.	L
SCA: 7 Organisation and Management				
38	Licence details Rating:	NSCA 26 Comments:	Licence activities are conducted in accordance with the licence.	H
39	Change notified Rating:	GN 15 (c) Comments:	Changes of personnel responsible for management and control of licensed activity (RSO, Applicant Authority and Signing Authority) have been reported to the CNSC within 15 days.	M
40	Location notification Rating:	LC 2300-2 Comments:	CNSC was informed in writing, within seven days, of sites where licensed activities were conducted for more than 90 days. Discontinuance of such sites was also reported within 7 days.	M
41	Annual Compliance Report Rating:	LC 2916 Comments:	The licensee submits the annual compliance report in the form specified in the appendix of the licence for each year the licence is valid.	M
42	Act/Regs available Rating:	GN 12 (1) (k) Comments:	A copy of the Act and Regulations (paper or electronic copy) are readily available to all workers.	L
43	Record requirements (>90 days at sites) Rating:	LC 2350-2 Comments:	Records and operational procedures are available at storage/use locations (greater than 90 consecutive days).	L
SCA: 11 Security				
44	Security indicators Rating:	GN 12 (1) (c), (g), (h), (i), (j) Comments:	Provisions are in place to ensure the security of nuclear substances and radiation devices and the health and safety of persons. This may be achieved through restricted access (for example use of locks, alarms, and security systems) and reporting of incidents including loss, theft and sabotage.	H

SCA: 11 Security				
45	Ssealed Source Security Requirements	LC 2490-1	Licensees have in place security measures including: -Inventory accounting -Access control measures -Up-to-date security plan -Information security measures -Intrusion detection with monitoring and testing -Response protocol -Secure storage of substances and devices -Security awareness program -Vehicle security measures	H
	Rating:	Comments:		
SCA: 12 International Obligations/Safeguards				
46	Import Restrictions	LC 2402-4	Imports are within the limits specified in the licence condition.	H
	Rating:	Comments:		
47	Export Restrictions	LC 2403-7	Exports are within the limits specified in the licence condition.	H
	Rating:	Comments:		
SCA: 13 Packaging and Transport				
48	Package secured in vehicle	PTNS 25 (4)	Consignments are segregated and securely stowed (refer to SSR-6 562, 564, 574 - PTNS 25(1) and TDG 5.4). Category II-Yellow and III-Yellow packages are not carried in compartments occupied by passengers - SSR-6 563.	H
	Rating:	Comments:		
49	Excepted packages content/activity	PTNS 26(1)(a)	Excepted packages meet the following criteria: - dose rate below 0.005 mSv/h – PTNS 25(4)(a) and SSR-6 516; - activity within limits of PTNS 26(2) and SSR-6 422; - consignor or consignee I.D. - PTNS 28(1)(i) and SSR-6 531; - UN number on package - PTNS 28(1)(i) and SSR-6 532; - package must be accompanied by a shipping document (a log kept by driver is acceptable for UN 2909, 2910, 2911) that identifies the shipping name and UN number - PTNS 29(2)(a) and TDG 1.43; - "RADIOACTIVE" visible inside package(UN2910) upon opening - PTNS 26(1)(a)(i) and SSR-6 424(b)(i). For UN 2908 (Empty Packages): - contamination inside an empty package does not exceed 100 times the levels specified in SSR-6 427(c) and PTNS 26(1)(a)(i); - Labels removed PTNS 26(1)(a)(i) and SSR-6 427(d); - package integrity must not be compromised – PTNS 26(1)(a) and SSR-6 306(b).	H
	Rating:	Comments:		
50	Type A package requirements	PTNS 28 (1)	A Type A package must be prepared and labelled in accordance of PTNS 28(1) and associated requirements from SSR-6. Package requirements are as follows: - contact dose rate below 2 mSv/h (non-exclusive use) - SSR-6 527; - name of consignor or consignee package - SSR-6 531; - shipping name - SSR-6 532 and TDG 4.11; - activity within limits - PTNS 26(2) and SSR-6 428; - UN number - SSR-6 532 and TDG 4.12; - "Type A" marking - SSR-6 534(b); - VRI code - SSR-6 534(c); - two (I-white, II-Yellow or III-Yellow) labels - SSR-6 538, 539, and TDG 4.6, 4.7; - identify the radionuclide on labels -SSR-6 540 (a); - maximum activity on labels - SSR-6 540 (b)(c) and TDG 4.14; - transport Index on labels (II-Yellow and III-Yellow) - SSR-6 540(d) as determined by SSR-6 523-524; - package integrity must not be compromised - PTNS 24(a) and SSR-6 306(b).	H
	Rating:	Comments:		

SCA: 13 Packaging and Transport				
51	Reporting requirements	PTNS 37-38-40	The consignor, the carrier and the consignee must provide an immediate report to CNSC (PTNS 37 (1)) and a 21 day report (PTNS 38) when becoming aware of any of the following situations: - failure to comply with the requirements of section 26; - a conveyance carrying radioactive material is involved in an accident; - package damage or tampering or leaking; - radioactive material lost, stolen or loss of control; - radioactive material has escaped from a containment system, a package or a conveyance during transport; - failure to comply with the Act and Regulations can lead to a situation in which the environment, the health and safety of persons or national security is adversely affected; - the level of non-fixed contamination as defined in the IAEA Regulations, during transport exceeds limits; - licensee has provided reports of damage or tampering discovered while opening packages as per PTNS 40(4), (5), (6).	H
	Rating:	Comments:		
52	Type A package certification	PTNS 42	Type A package design, test results and packaging instructions kept on file for two years after last shipment.	H
	Rating:	Comments:		
53	Showing proof of TDG training	PTNS 25 (1)	A person handling dangerous goods must provide their training certificate or copy of it to an inspector immediately upon request. TDG 6.8 This requirement does not apply for excepted package (TDG 1.43 (b)).	M
	Rating:	Comments:		
54	Competent authority certificates	PTNS 25 (2)(c)	Consignor has competent authority certificates for applicable sources and packages (refer to SSR-6 561).	M
	Rating:	Comments:		
55	Transport document requirement	PTNS 29(1)	The consignor of radioactive material provides a shipping document that includes the following (refer to TDG 3.5 and SSR-6 546): - consignor and consignee names and addresses; - 24 hour contact number; - number of packages; - UN number*; - shipping name*; - Class # 7*; - radionuclide identification*; - form*; - maximum activity*; - category of package*; - transport index*; - competent authority certificate number(s)*. For consignments of more than one package, the required information (*) must be given for each package. - Consignor's certification with printed name of the consignor - PTNS 25(1), TDG 3.6.1	M
	Rating:	Comments:		
56	Shipping doc kept 2 years	TDG 3.11	Shipping documents used are kept on file for two years.	M
	Rating:	Comments:		
57	Transport document location	TDG 3.7	Shipping document is located within driver's reach or in a door pocket on the driver's side.	M
	Rating:	Comments:		

SCA: 13 Packaging and Transport				
58	TDG training certificate	TDG 6.1, 6.3, 6.5	The employer is responsible for: 6.1(2)(a) ensuring that only an adequately trained worker who holds a valid TDG certificate handle Class 7 dangerous goods ; or 6.1 (2)(b) performs those activities in the presence and under the direct supervision of a person who is adequately trained and who holds a training certificate in accordance with this Part. 6.3 issuing training certificate that includes: - the employer's business address; - the employee's name; - aspects of handling and transporting; - employee and employer signatures; and - the expiry date of the certificate (TDG 6.5).	M
	Rating:	Comments:		
59	TDG training certificate on file	TDG 6.6, 6.7	A copy of the TDG training certificate is kept on file for two years and is available to the inspector.	M
	Rating:	Comments:		

Disclaimer - CNSC licensees may use this worksheet voluntarily to ascertain the CNSC's general expectations regarding regulatory requirements. Such requirements would generally be assessed during a Type I and Type II inspection of licences issued pursuant to the Nuclear Substances and Radiation Devices Regulations. The expectations listed for each regulatory requirement are only provided as a guide. Similar worksheets will be used by CNSC staff for on-site inspections. Inspections, will, however, be carried out on a case-by-case basis in the context of the licensed activities and the circumstances of individual situations. This worksheet is not intended to limit the scope of CNSC inspections or the powers of CNSC inspectors. Licensees should contact the CNSC to obtain information regarding their specific licence requirements.

Canadian Nuclear Commission canadienne
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APPENDIX A RATING SYSTEM (GRADES)

A - Exceeds requirements

Assessment topics or programs meet and consistently exceed applicable CNSC requirements and performance expectations. Performance is stable or improving. Any problems or issues that arise are promptly addressed, such that they do not pose an unreasonable risk to the maintenance of health, safety, security, environmental protection, or conformance with international obligations to which Canada has agreed.

B - Meets requirements

Assessment topics or programs meet the intent or objectives of CNSC requirements and performance expectations. There is only minor deviation from requirements or the expectations for the design and/or execution of the programs, but these deviations do not represent an unreasonable risk to the maintenance of health, safety, security, environmental protection, or conformance with international obligations to which Canada has agreed. That is, there is some slippage with respect to the requirements and expectations for program design and execution. However, those issues are considered to pose a low risk to the achievement of regulatory performance requirements and expectations of the CNSC.

C - Below requirements

Performance deteriorates and falls below expectations, or assessment topics or programs deviate from the intent or objectives of CNSC requirements, to the extent that there is a moderate risk that the programs will ultimately fail to achieve expectations for the maintenance of health, safety, security, environmental protection, or conformance with international obligations to which Canada has agreed. Although the risk of failing to meet regulatory requirements in the short term remains low, improvements in performance or programs are required to address identified weaknesses. The licensee or applicant has taken, or is taking appropriate action.

D - Significantly below requirements

Assessment topics or programs are significantly below requirements, or there is evidence of continued poor performance, to the extent that whole programs are undermined. This area is compromised. Without corrective action, there is a high probability that the deficiencies will lead to an unreasonable risk to the maintenance of health, safety, security, environmental protection, or conformance with international obligations to which Canada has agreed. Issues are not being addressed effectively by the licensee or applicant. The licensee or applicant has neither taken appropriate compensating measures nor provided an alternative plan of action.

E - Unacceptable

Evidence of an absence, total inadequacy, breakdown, or loss of control of an assessment topic or a program. There is a very high probability of an unreasonable risk to the maintenance of health, safety, security, environmental protection, or conformance with international obligations to which Canada has agreed. An appropriate regulatory response, such as an order or restrictive licensing action has been or is being implemented to rectify the situation.

N/A – Not applicable

N/C – Not checked

Figure 61: Sample grading guidance for Accelerator and Class II facilities

SCA	Fully satisfactory (FS)	Satisfactory (SA)	Below expectations (BE)	Unacceptable (UA)	Mitigating factor	Aggravating factor	Grade	Explanation/justification
Radiation protection	Radiation doses are equal to or less than the norm for the sector. Contamination, if applicable, did not affect a worker.	Increased dose below reportable limits. Contamination that could affect a worker.	Exposure to a worker in excess of regulatory limits. An incident that would result in a licensee exceeding action level limits (see section 6 of the <i>Radiation Protection Regulations</i>). Limited contamination that could affect a few persons or limited area.	Exposures to multiple workers in excess of regulatory limits. Widespread contamination to several persons or within a place.				
Physical design	No significant weaknesses in any element of the facility design.	Reduced redundancy that is not likely to prevent a safety-related system from meeting its design intent.	Compromise to barriers where defence in depth would be considered reduced, however redundancy remains. Compromise to safety due to a situation that was not previously evaluated and is believed to be probable.	Compromise to barriers where defence in depth would be considered inadequate. Compromise to safety due to a situation that was not previously evaluated and is believed to be probable.				
Operating performance	No significant lapses in conduct of licensed activities in accordance with licensee procedures or processes.	Partial failure to conduct licensed activities in accordance with one licensee procedure or processes.	Failure to conduct licensed activities in accordance with one or more licensee procedures and processes.	Widespread systemic failure to ensure licensed activities conducted according to licensee procedures and processes.				

SCA	Fully satisfactory (FS)	Satisfactory (SA)	Below expectations (BE)	Unacceptable (UA)	Mitigating factor	Aggravating factor	Grade	Explanation/justification
Fitness for service	No significant risk that systems or components will not remain effective or that equipment will not be able to perform its intended function when called upon to do so.	Partial failure to ensure single system or components remain effective or equipment is able to perform its intended function when called upon to do so.	Failure to ensure single system or components remain effective or equipment is able to perform its intended function when called upon to do so.	Widespread systemic failure to ensure systems and components remain effective and equipment is able to perform its intended function when called upon to do so.				
Security	No significant weaknesses in security.	Weaknesses in access control or barrier.	Failure in one or more barriers designed to delay access to security Category I or II sources.	Widespread systemic failure to adhere to security plan.				
Packaging and transport	No significant weaknesses in packaging and transport procedures and processes.	Failure in one of the licensee's packaging and transport procedures and processes.	Failure in one or more elements of the licensee's packaging and transport procedures and processes.	Widespread systemic failure to adhere to licensee's packaging and transport procedures and processes.				

Appendix H: Abbreviations and glossary

Abbreviations

ALARA	as low as reasonably achievable
AMP	administrative monetary penalty
CNSC	Canadian Nuclear Safety Commission
COMP	Canadian Organization of Medical Physicists
CRPA	Canadian Radiation Protection Association
EDO	exposure device operator
GBq	gigabecquerel
IAEA	International Atomic Energy Agency
INES	International Nuclear and Radiological Event Scale
MBq	megabecquerel
mSv	millisievert
NEW	nuclear energy worker
NSCA	<i>Nuclear Safety and Control Act</i>
RSO	radiation safety officer
SCA	safety and control area
Sv	Sievert
TBq	terabecquerel

Glossary

cyclotron

A particle accelerator that speeds up particles in a circular motion until they hit a target at the perimeter of the cyclotron. Some cyclotrons are used to produce medical isotopes.

effective dose

The sum of the products, expressed in sieverts, obtained by multiplying the equivalent dose of radiation received by, and committed to, each organ or tissue set out in column 1 of an item of Schedule 1 by the weighting factor set out in column 2 of that item. (Source: *Radiation Protection Regulations*)

enforcement actions

The set of activities associated to compel a licensee back into compliance and to deter further non-compliances with the *Nuclear Safety and Control Act*, its regulations, and licences, decisions and certificates issued by the CNSC.

exposure device

A radiation device that is designed for carrying out gamma radiography, and includes any accessory to the device such as a sealed source assembly, a drive mechanism, a sealed source assembly guide tube and an exposure head. (Sources: *Nuclear Substances and Radiation Devices Regulations; Packaging and Transport of Nuclear Substances Regulations, 2015*)

five-year dosimetry period

The period of five calendar years beginning on January 1 of the year following the year in which the *Radiation Protection Regulations* came into force, and every subsequent period of five calendar years.

fixed nuclear gauge

A radiation device that is attached to a structure and enables the nuclear substance it holds to be used for its radiation properties to measure process-related parameters (such as liquid flow or liquid level).

medical linear accelerator

An accelerator that produces a collimated beam of high-energy photons (i.e., X-rays) that are used to deliver controlled doses of radiation for therapeutic purposes.

natural background radiation

Radiation that is emitted from naturally occurring radioactive materials and cosmic rays.

nuclear energy worker

A person who is required, in the course of his or her business or occupation in connection with a nuclear substance or nuclear facility, to perform duties in such circumstances that there is a reasonable probability that he or she may receive a dose of radiation that is greater than the prescribed limit for the general public. (Source: *Nuclear Safety and Control Act*)

nuclear medicine technologist

A medical radiation technologist certified by the Canadian Association of Medical Radiation Technologists. The nuclear medicine technologist works in the field of nuclear medicine and performs various duties such as preparing and administering radiopharmaceuticals, taking images of different organs and bodily structures, using computers to process data and enhance images, analyzing biological specimens and working closely with all members of the healthcare team.

one-year dosimetry period

The period of one calendar year beginning on January 1 of the year following the year in which the *Radiation Protection Regulation* came into force, and every subsequent period of one calendar. (Source: *Radiation Protection Regulations*)

portable nuclear gauge

A portable radiation device used to measure density, level, thickness or moisture content.

prescribed equipment

The equipment prescribed by section 20 of the *General Nuclear Safety and Control Regulations*.

Section 20 states that each of the following items is prescribed equipment for the purposes of the *Nuclear Safety and Control Act*:

- a package, special form radioactive material, low dispersible radioactive material, fissile-excepted radioactive material, radioactive material that has a basic radionuclide value that is not listed in the IAEA Regulations and an instrument or article that has an alternative activity limit for an exempt consignment, as those terms are defined in subsection 1(1) of the *Packaging and Transport of Nuclear Substances Regulations, 2015*
- a radiation device and a sealed source, as defined in section 1 of the *Nuclear Substances and Radiation Devices Regulations*
- Class II prescribed equipment, as defined in section 1 of the *Class II Nuclear Facilities and Prescribed Equipment Regulations*
- equipment that is capable of being used in the design, production, operation or maintenance of a nuclear weapon or nuclear explosive device

All controlled nuclear equipment is prescribed equipment for the purposes of the *Nuclear Safety and Control Act*, with respect to the import and export of that equipment.

radiation device

A device that contains more than the exemption quantity of a nuclear substance and that enables the nuclear substance to be used for its radiation properties for various purposes such as industrial radiography, oil exploration, road construction and industrial processes.

radiopharmaceutical

A drug containing a radioactive substance that is used in medical imaging and cancer treatment.

sealed source

A radioactive nuclear substance in a sealed capsule or in a cover to which the substance is bonded, where the capsule or cover is strong enough to prevent contact with or the dispersion of the substance under the conditions for which the capsule or cover is designed. (Sources: *Class I Nuclear Facilities Regulations*; *Class II Nuclear Facilities and Prescribed Equipment Regulations*; *Nuclear Substances and Radiation Devices Regulations*)

unsealed source

A source other than a sealed source. (Source: *Nuclear Substances and Radiation Devices Regulations*). These nuclear substances are in a physical form where dispersion of the radioactive material is possible during use or handling. Usually a liquid, they may also be in solid, powder or gaseous form. Unsealed sources are

commonly used in medical diagnostic and therapeutic treatments, as well as in laboratory research applications. Also called open source.

Appendix I: Relevant Regulatory References

The following are a list of regulatory references that apply to the use of nuclear substances and prescribed equipment. The list is not exhaustive.

Act and regulations

[*Nuclear Safety and Control Act*](#)

[*General Nuclear Safety and Control Regulations*](#)

[*Administrative Monetary Penalties Regulations \(Canadian Nuclear Safety Commission\)*](#)

[*Radiation Protection Regulations*](#)

[*Class II Nuclear Facilities and Prescribed Equipment Regulations*](#)

[*Nuclear Substances and Radiation Devices Regulations*](#)

[*Packaging and Transport of Nuclear Substances Regulations, 2015*](#)

[*Transportation of Dangerous Goods Regulations*](#)

Regulatory documents

[*REGDOC-1.4.1, Licence Application Guide: Class II Nuclear Facilities and Prescribed Equipment \(draft\)*](#)

[*REGDOC-1.5.1, Application Guide: Certification of Radiation Devices or Class II Prescribed Equipment \(draft\)*](#)

[*REGDOC-1.6.1, Licence Application Guide: Nuclear Substances and Radiation Devices, Version 2*](#)

[*REGDOC-2.2.3, Personnel Certification: Radiation Safety Officers*](#)

[*REGDOC-2.2.3, Personnel Certification: Exposure Device Operators*](#)

[*G-129, rev. 1, Keeping Radiation Exposures and Doses “As Low as Reasonably Achievable \(ALARA\)”*](#)

[*REGDOC-2.9.1, Environmental Protection: Environmental Principles, Assessments and Protection Measures, Version 1.1*](#)

[*REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources*](#)

[*REGDOC-2.14.1, Information Incorporated by Reference in Canada’s Packaging and Transport of Nuclear Substances Regulations, 2015*](#)