Canada's Nuclear Regulator

Class IB Facilities

Licence Application Guide: Class IB Processing Facilities

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Licence Application Guide: Class IB Processing Facilities
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Canadian Nuclear Safety Commission
280 Slater Street
P.O. Box 1046, Station B
Ottawa, ON K1P 5S9
Canada

Tel.: 613-995-5894 or 1-800-668-5284 (in Canada only)
Fax: 613-995-5086
Email: cnsc.info.ccsn@cnsc-ccsn.gc.ca
Website: https://www.cnsc-ccsn.gc.ca/eng/
Facebook: facebook.com/CanadianNuclearSafetyCommission
YouTube: youtube.com/cnscccsn
Twitter: @CNSC_CCSN
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Preface

This regulatory document is part of the CNSC's regulated facilities and activities series of regulatory documents. The full list of regulatory document series is included at the end of this document and can also be found on the CNSC's website.

In accordance with the *Nuclear Safety and Control Act,* a person must have a licence issued by the CNSC to prepare a site for, or construct, operate or decommission a Class IB processing facility. This regulatory document, REGDOC-1.2.2, *Licence Application Guide: Class IB Processing Facilities*, provides clarity on the requirements and guidance for preparing an application to obtain a licence to prepare a site for, construct, operate and/or decommission a Class IB processing facility in Canada.

This document will be used by applicants to prepare an application for proposed new processing facilities and for licence renewals for existing Class IB processing facilities.

This is the first version of this document.

For information on the implementation of regulatory documents and on the graded approach, see REGDOC-3.5.3, *Regulatory Fundamentals*.

The words "shall" and "must" are used to express requirements to be satisfied by the licensee or licence applicant. "Should" is used to express guidance or that which is advised. "May" is used to express an option that is permissible within the limits of this regulatory document. "Can" is used to express possibility or capability.

Nothing contained in this document is to be construed as relieving any licensee from any other pertinent requirements. It is the licensee's responsibility to identify and comply with all applicable regulations and licence conditions.

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Licence Application Guide: Class IB Processing Facilities

1. Introduction

1.1 Purpose

This regulatory document clarifies requirements and provides guidance for an application for a licence for a Class IB processing facility. It identifies the information to be provided in support of a licence application to prepare a site for, to construct, to operate or to decommission a Class IB processing facility for:

- processing, reprocessing or separation of an isotope of uranium, thorium or plutonium
- the manufacturing of a product from uranium, thorium or plutonium
- processing or use, in a quantity greater than 10^{15} Bq per calendar year, of nuclear substances other than uranium, thorium or plutonium

1.2 Scope

This document is intended to be used by applicants to prepare a licence application for a licence to prepare a site for, to construct, to operate and/or to decommission a proposed new Class IB processing facility, or for the renewal of a licence for an existing facility.

1.3 Relevant legislation

The following provisions of the *Nuclear Safety and Control Act* (NSCA) and the regulations made under it are relevant to this document:

NSCA:

- subsection 24(4)
- paragraphs 26(a) and (f)

Canadian Nuclear Safety Commission Cost Recovery Fees Regulations:

- part 2

Class I Nuclear Facilities Regulations:

- sections 3, 4, 5, 6, 7, 8, 14

General Nuclear Safety and Control Regulations:

- sections 3, 15, 17, 21, 22, 23, 27, 28, 29, 30, 31, 32
- sub-sections 12(1), 28(1)
- paragraphs 10(b), 20(d), 21(a), 21(b), 29(1)(d), 29(1)(h), 29(1)(i)

Nuclear Non-Proliferation Import and Export Control Regulations:

Nuclear Security Regulations:

- sections 7.1, 7.2 38, 42, 43, 44, 45, 46, 47, 48
- subsections 7(3), 37(1), 37(2), 37(3)

Nuclear Substances and Radiation Devices Regulations:

- subsection 36(1)
- paragraphs 3(1)(e), 3(1)(g),

Packaging and Transport of Nuclear Substances Regulations, 2015

Radiation Protection Regulations:

- sections 4, 13, 14, 15, 16, 20, 21, 22, 23, 24
- sub-section 1(3)

The *Class II Nuclear Facilities and Prescribed Equipment Regulations, Canada Labour Code* , *Canada Occupational Health and Safety Regulations* and *Transportation of Dangerous Goods Regulations* may apply.

The applicant must also comply with all applicable laws and regulations at all jurisdictional levels.

Note: Various requirements pertaining to the safety and control areas or to other regulatory topics are addressed in each section of the regulatory document. However, applicants are responsible for ensures that their application addresses all requirements for proposed activities under the NSCA and regulations.

1.4 National and international standards

Key principles and elements used in developing this document are consistent with national and international standards. Furthermore, this regulatory document is compatible with the safety objectives and principles in IAEA SSR-4, *Safety of Nuclear Fuel Cycle Facilities* [1].

1.5 CNSC contact information

A single point of contact from the CNSC is assigned to work with every licensee or applicant. This point of contact can provide the licensee or applicant with additional information or explanation of the information contained within this document.

To contact the CNSC, refer to the CNSC's website.

2. Licensing Basis and Licensing Process

REGDOC-3.5.1, *Licensing Process for Class I Nuclear Facilities and Uranium Mines and Mills* [2], clarifies the licensing process in the context of the NSCA. Information on the licensing basis is found in REGDOC-3.5.3, *Regulatory Fundamentals* [3]. The licensing process is initiated when the applicant indicates in writing their intent to submit a licence application.

An applicant may submit an application for a licence to do any combination of the following: prepare a site for, construct, operate, or decommission a Class IB processing facility.

The CNSC includes environmental reviews as part of the licensing process to evaluate the environmental risks associated with proposed facility and activities. For more information on the CNSC's environmental review and licensing processes, see:

- REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures* [4]
- REGDOC-3.5.1, *Licensing Process for Class I Nuclear Facilities and Uranium Mines and Mills*, [2]

Some Class IB processing facilities may require an assessment under the *Impact Assessment Act* (IAA). The relevant types of designated projects are identified in section 26 of the IAA. Information on the integrated impact assessment process can be found at canada.ca/IAAC.

Note: An applicant who intends to possess Category I and/or Category II nuclear material, as defined in the *Nuclear Security Regulations,* should consult with CNSC staff to identify additional relevant requirements for the site prior to submitting an application. Additional requirements for a licence application for a licence pertaining to Category I and II nuclear material are found in section 3 of the *Nuclear Security Regulations*. There may also be additional requirements relating to the physical design, security and safeguard SCAs.

Standard licence application information is found in section 4 of this document.

The applicant is responsible for ensuring that the licence application contains sufficient information to meet regulatory requirements. The applicant should provide cross-references to detailed information in other sections as appropriate.

Early engagement with CNSC staff is encouraged. The applicant should consult CNSC staff to confirm which editions of codes and standards applicable to the facility are to be cited or addressed in the application. This should be done prior to developing proposed safety policies, programs, processes, procedures and other safety and control measures. This supplemental guidance may also indicate documents other than those listed in appendix A that the applicant should consider and address in the application. The application should cite the regulatory documents, codes and standards that were used to demonstrate the applicant's ability to meet the regulatory requirements set under the NSCA and regulations. CNSC staff may request additional information to evaluate the application, as necessary.

Note: The information provided in this document does not prevent applicants from proposing alternatives. However, any proposed alternative should appropriately reflect the complexities and hazards of the proposed activities and should be supported by suitable information.

The applicant may provide references to any documents included in another licence application. The applicant should review the information in these documents and update it as required. Any updated information should be clearly identified.

The application should indicate the relevant sections of each supporting document. **Note:** If the document version in the supporting information has changed, the applicant should provide the CNSC with the new version number and a revised copy of the document.

The applicant shall provide the name, maximum quantity (at any given time) and form of any nuclear substance to be encompassed by the licence. The applicant should provide the scientific name of each nuclear substance. This information may be provided in summary format; for example, by providing a table of the nuclear substances and the information required for each substance.

In addition to the items above, if the application is for a new facility, the applicant should provide a list of any similar facilities owned or operated by the applicant that have been assessed and licensed by either the CNSC or any foreign regulatory body. The list should include the following information:

- facility name
- location
- date when the most recent licence was granted
- description of the facility

Licence renewals

The applicant should provide the existing licence number if the application is for a licence renewal.

For the renewal of an existing licence, the applicant shall indicate if any information was submitted with previous licence applications. The renewal application should provide a list of the supporting documents and clearly identify which information was previously submitted. The applicant should review the information in previously submitted documents and update it as required. Changes should be clearly identified.

Note that it is prohibited to submit prescribed information via unencrypted email. Prescribed information, such as details of the security program, shall be submitted in accordance with sections 21 and 23 of the *General Nuclear Safety and Control Regulations*. Guidance for the protection and transmission of prescribed information can be found in REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material* [5].

3. Regulatory Requirements and Guidance

In the application, the applicant should include sufficiently detailed information about the policies, programs, procedures and other documents that describe safety and control measures. All policies and programs should allow for continuous improvement, on an ongoing basis for all lifecycle stages of the facility.

Unless otherwise indicated, the information listed under each area of regulatory interest is required for an application for any lifecycle stage. The level of detail may vary depending on the activities requested in the application; a graded approach applies.

3.1 Management system

3.1.1 General considerations

The application shall describe the proposed management system programs, processes and procedures that have been or will be put in place to protect health, safety and the environment, as well as a description of the organizational management structure.

The application should refer to CSA N286, *Management system requirements for nuclear facilities* [6] to meet the requirements for the management system SCA. If an application does not use CSA N286, the applicant shall provide the alternate standard used with justification.

The application should also describe the safety policies, the roles of external safety assessment organizations and the advisory committees that will advise the management of the organization that will carry out licensed activities.

3.1.2 Management system

The application should describe how the applicant's management system is compliant with relevant requirements and how the management system will be implemented.

3.1.3 Organization

The application shall describe the applicant's organizational management structure insofar as it may bear on the applicant's compliance with the NSCA and the regulations made under it, including the internal allocation of functions, responsibilities and authority.

3.1.4 Performance assessment, improvement and management review

The application should describe the proposed programs covering performance assessment, improvement and management system assessment.

The application should describe the adequate provisions made for an objective, internal self-evaluation program supported by periodic external reviews and taking into account national and international experience and feedback from the nuclear and other relevant industries.

The application should describe how organizational effectiveness and safety performance are measured, including the use of performance indicators to detect any shortcomings and deteriorations in safety.

The application should describe how organizational changes are managed to prevent degradation of safety performance.

The application should demonstrate that the analysis of the causes of significant events will consider technical, organizational and human factors aspects, and that the necessary arrangements have been made to report and analyze near-miss events.

The application should clearly state how the applicant intends to present, promote and assess the key characteristics of good safety culture and safety performance by all workers at the facility, including contractors and subcontractors. The application should provide a proposed timeline and milestones for completion of specific detailed safety performance documentation that will be developed later.

3.1.5 Operating experience

The application should describe how the program for feedback of operating experience has been implemented during site evaluation and design activities, and how it will continue during the construction, commissioning and operating phases of the processing facility's lifecycle.

3.1.6 Change management

The application should describe change management within the Class IB processing facility.

3.1.7 Safety culture

The application shall demonstrate that the applicant's approach to foster a healthy safety culture. This should be in accordance with REGDOC-2.1.2, *Safety Culture* [7].

3.1.8 Configuration management

The application should describe the provisions to establish and maintain configuration from concept until end of operation life.

Design change control and configuration management should be in accordance with CSA N286, *Management system requirements for nuclear facilities* [6].

3.1.9 Records management

The application should describe the adequate provisions for records management. Licensees are required to keep records relating to the licence submitted to the Commission.

3.1.10 Business continuity

The application should include a business continuity plan. This plan should provide procedures and information that guide the applicant to respond, recover, resume and restore to a predefined level following disruption. Some examples of disruptions are:

- natural disasters (such as hurricanes, floods, blizzards, earthquakes and fire)
- accidents
- sabotage, including cyber attacks and hacker activity
- labour actions

- loss of a key contractor
- power and energy disruptions
- communication, transport, safety and service sector failure
- health-related epidemic or pandemic events that have or could have a measurable impact
- environmental events (such as pollution and hazardous material spills)

3.2 Human performance management

3.2.1 General considerations

The application shall describe the qualifications, adequate numbers, skills and competencies required by workers at the facility.

An application shall include a description of the measures to ensure a sufficient number of workers in all job areas and that workers have the necessary knowledge, skills, procedures and tools in place to safely carry out their duties.

The application should describe the measures to promote and support human performance at all levels in the organization. The application should demonstrate how the applicant's programs and processes interface to support continuous improvement of human performance. The application should demonstrate various measures to identify and monitor human performance weaknesses and to correct any organizational deficiencies to minimize human error.

The application should describe the workforce planning process, including measures for knowledge transfer, to ensure that workers are recruited and trained to fill each key role within the organization.

3.2.2 Human performance program

The application should describe how the human performance program addresses and integrates the range of human factors that influence human performance, including but not limited to:

- adequate provision of qualified workers
- reduction of human error
- organizational support for safe work activities
- continuous improvement of human performance
- monitoring of hours of work

3.2.3 Personnel training

The applicant shall describe a training system. The training system shall be in accordance with REGDOC-2.2.2, *Personnel Training* [8]. The CNSC uses the systematic approach to training (SAT) process as a standard by which training program submissions are evaluated. The application shall include the applicant's overall training policy and all governance documents (or a description) related to the training system. The application shall include descriptions of the initial and continuing training programs for all workers engaged in licensed activities, including workers employed as trainers and instructional staff.

The application should describe the processes established to:

- develop and manage documentation related to all phases of training, including analysis, design, development, implementation and evaluation
- manage training change control
- manage and track the status of staff and contractor qualifications

Information on the SAT is found in REGDOC-2.2.2, *Personnel Training* [8].

3.2.4 Work organization and job design

The application should describe the minimum number of workers with specific qualifications required for safe operations in normal and accident conditions (minimum staff complement). The application should demonstrate that the minimum staff complement will be monitored and recorded.

The application should demonstrate that the adequacy of the minimum staff complement has been determined through a systematic analysis to identify the required number of workers and their qualifications. The application should demonstrate that the minimum staff complement can meet the performance requirements and support the safe operation of the facility.

For more information, refer to REGDOC-2.2.5, *Minimum Staff Complement* [9], and REGDOC-2.5.1, *General Design Considerations: Human Factors* [10].

3.2.5 Fitness for duty

For an application to operate a facility, information on fitness for duty shall be submitted if the facility is a high security site. High security sites are identified as a nuclear power plant or a nuclear facility where Category I or II nuclear material is processed, used or stored as per section 1 of the *Nuclear Security Regulations*. For sites subject to this designation, the application should identify the oversight requirements for supervisors of security personnel from the perspective of fitness for duty.

For more information regarding fitness for duty for high security sites, refer to:

- REGDOC-2.2.4, *Fitness for Duty: Managing Worker Fatigue* [11]
- REGDOC-2.2.4, *Fitness for Duty, Volume II: Managing Alcohol and Drug Use* [12]
- REGDOC-2.2.5, *Minimum Staff Complement* [9]

3.3 Operating performance

3.3.1 General considerations

An application to construct, operate or decommission a facility should include information on how the applicant will ensure that normal facility operations:

- are carried out safely, such that radiation doses to workers and members of the public – as well as any planned discharges or releases of radioactive material or hazardous substances from the facility – will be within the proposed limits and conditions
- adhere to any applicable laws and regulations at all jurisdictional levels, and to applicable codes and standards

An application to construct, operate or decommission a facility should include information regarding the development, verification, validation and implementation of programs and procedures related to commissioning, maintenance, operation and decommissioning.

For all lifecycle stages, the application should describe how the operating principles, policies, processes and programs will confirm that the structures, systems and components (SSCs) important to safety will perform and function in accordance with the design specifications and regulatory requirements.

For a new facility, the application should describe the processes used to ensure that the performance of the SSCs has been assured from site preparation to construction to operation and to the future, if major modifications are made to the facility.

3.3.2 Conduct of licensed activity

The application shall describe the proposed measures, policies, methods and procedures for carrying on the licensed activity at the facility. The application shall describe the means for preparation of equipment for maintenance and the monitoring of SSCs to confirm that they will continue to operate as required by the design.

The application should also describe how the applicant will:

- exercise overall responsibility for safety in conducting licensed activities, including ongoing modifications to the facility
- carry out effective oversight of these activities and procedural adherence

An application to operate or decommission a facility shall describe how the applicant will handle, store, and transport nuclear and hazardous substances.

3.3.3 Procedures

The application should describe the development, verification, validation and implementation of operating procedures for the activities to be licensed covering normal, unplanned and emergency conditions.

The application should describe how all normal, unplanned and emergency operating procedures will be validated. For more information, refer to REGDOC-2.5.1, *General Design Considerations: Human Factors* [10].

3.3.4 Operating limits and conditions

An application to construct or operate a facility shall state the safe operating limits and conditions. The information submitted should describe how the applicant will comply with limits imposed by the design and safety analysis assumptions. The application should clearly describe the actions to be taken if the limits and conditions are not met.

The information available on the set of limits and conditions and the accompanying design information for the facility should be sufficient to support the training and qualification of facility workers.

No information on operating limits and conditions is required for an application to prepare a site, construct or decommission for a Class IB processing facility.

3.4 Safety analysis

The safety analysis SCA covers maintenance of the safety analysis that supports the overall safety case for the facility. Safety analysis is a systematic evaluation of the potential hazards associated with the conduct of a proposed activity or facility and considers the effectiveness of preventive measures and strategies in reducing the effects of such hazards.

3.4.1 General considerations

An application to construct or operate a facility shall include a safety analysis program that is in accordance with REGDOC-2.4.4, *Safety Analysis for Class IB Nuclear Facilities* [13]. The safety analysis report submitted for an application to construct is a preliminary report. The final report must be submitted for an application to operate a facility. A safety analysis report is not required for an application to prepare a site.

3.4.2 Criticality safety

An application to construct, operate or decommission operations with fissionable materials shall meet the requirements of REGDOC-2.4.3, *Nuclear Criticality Safety* [14].

No information on criticality safety is required for an application to prepare a site.

3.5 Physical design

3.5.1 General considerations

Where appropriate, the application shall describe the radiation protection and environmental protection design principles and approaches adopted with the intent for facility operations to be carried out safely. The information submitted shall demonstrate that, in all operational states, radiation doses within the facility or any planned releases of nuclear substances from the facility meet the requirements of REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures* [4], and REGDOC-2.4.4, *Safety Analysis for Class IB Nuclear Facilities* [13]; are kept below regulatory limits; and are as low as reasonably achievable (ALARA). REGDOC-2.7.1, *Radiation Protection* [15], also provides guidance on design considerations for meeting CNSC regulatory requirements for the control of occupational exposures.

An application to prepare a site, construct or operate a facility shall include an appropriate level of detail about the description of the overall physical design of the facility, the design practices and the safety concepts commensurate with the activities being proposed in the licence. For a licence to construct or operate a facility, the application shall also describe the general approach to the design and performance of the SSCs.

An application to construct or operate a new facility shall include information showing that the facility's design, construction, commissioning and operation is consistent with prevailing national and international codes and standards. The facility design should conform to the *National Building Code of Canada, National Fire Code of Canada* and CSA N393, *Fire protection for facilities the process, handle or store nuclear substances* [16]. Where appropriate, CNSC staff may require more stringent requirements with regards to seismic and fire protection.

The IAEA suite of safety standards and safety guides are used as guidance in the technical assessment of fuel cycle facility design. These safety guides include:

- SSR-1, *Site Preparation for a Nuclear Facility* [17]
- SSR-4, *Safety of Nuclear Fuel Cycle Facilities* [1]
- SSG-5, *Safety of Conversion Facilities and Uranium Enrichment Facilities* [18]
- SSG-6, *Safety of Fuel Fabrication Facilities* [19] (for less than 6% enrichment)
- SSG-7, *Safety of Uranium and Plutonium Mixed-Oxide Fabrication Facilities* [20]
- SSG-42, *Safety of Nuclear Fuel Reprocessing Facilities* [21]
- SSG-43, *Safety of Nuclear Fuel Cycle Research and Development Facilities* [22]

For other radioisotope processing facilities, including processing of unsealed nuclear substances, REGDOC-2.5.6, *Design of Rooms Where Unsealed Nuclear Substances Are Handled* [23], should be followed.

Where there are multiple sets of regulatory requirements for the same parameters, the most stringent requirement should be applied. Where there is a conflict between requirements, the applicant may propose alternate approaches and provide justification. The application should provide information that demonstrates adherence with the most recent national and international best practices as applicable.

For existing facilities, the application should address the information in this section to the extent practicable and provide references to past submissions. Any alternative approaches selected or mitigating measures applied should be identified and justified.

3.5.2 Design governance

An application to prepare a site, construct or operate a facility shall describe how design governance and design change control are implemented for the proposed activities in consideration of factors described below.

Design change control and configuration management should be in accordance with CSA N286 *Management systems for nuclear facilities* [6]. For facilities processing radioisotopes used in medicinal applications, alternate standards, including ISO 13485, *Medical devices – Quality management systems – Requirements for regulatory purposes* [24], may be applied.

Refer to REGDOC-2.5.1 *General Design Considerations: Human Factors* [10], for more information.

3.5.3 Site characterization

An application to prepare a site shall contain a description of the site evaluation process and any preparatory work done at the site. An application to prepare a site shall contain a description of the site's susceptibility to human activity and natural phenomena. The IAEA documents listed in section 3.5.1 and CSA N288.6*, Environmental risk assessments at Class I nuclear facilities and uranium mines and mills* [25], may serve as guidance for site characterization.

If the project triggers an impact assessment under the IAA, the application may point to that assessment, rather than submit the information another time.

An application to construct, operate or decommission a Class IB processing facility should refer to or summarize the information previously submitted in any relevant environmental assessment or licensing documentation, such as environmental impact statements and any previous licence application. The applicant should review and update the information as necessary.

3.5.4 Facility design

The application shall describe the overall conceptual design of the facility and the operation and interaction of all the SSCs. To ensure that the facility will be reliable, robust and maintainable, the applicant shall ensure that the design conforms to an acceptable quality assurance program and should ensure the design incorporates the latest developments in knowledge and technology and is resistant to the effects of common-cause events and, to the extent practicable, to severe accidents. The application should identify the criteria used for determining the level of acceptable risk and demonstrate that the criteria meet general safety objectives.

The application should describe the decision-making methodology (for example, cost/benefit and best available technology) that was used to select the design option.

The application should include basic technical and schematic drawings of the main facility SSCs, including:

- details of the physical and geographical location of the facility
- means of access to the site

The application should also include general layout drawings of the entire facility, accompanied by a brief description of the main systems and equipment, and their individual purposes and interactions. The application should refer to the information on the adequate provisions made for the physical protection of the facility.

The applicant should provide information on the design of laboratories and Class II nuclear facilities within the facility and if included as a licensed activity under the Class I licence. The design of laboratories and Class II nuclear facilities shall meet the requirements of the *Class II Nuclear Facilities and Prescribed Equipment Regulations* and the *Nuclear Substances and Radiation Devices Regulations*, as applicable.

The applicant should provide information on the adequate provisions for storage of items such as, but not limited to, contaminated tooling and radiation sources.

For more information, REGDOC-2.5.6, *Design of Rooms Where Unsealed Nuclear Substances Are Handled* [23].

3.5.5 System and component design

Commensurate with the activities being proposed in the licence application and safety importance of the system as it applies to the activities, the applicant should provide, in detail, the characteristics and major components of the system and its design basis requirements (for example, the functional and performance requirements associated with the definition of design basis).

The application should describe the basis for the design of the pressure-retaining SSCs and their supports. The application should also describe the pressure boundary standards and codes along with their editions and effective dates. It should also describe the overall pressure boundary program, including its implementation processes and procedures. In addition, the application should describe the service agreement with a recognized authorized inspection agency and the related pressure boundary quality assurance program.

The application should clearly describe facility heating, ventilation and air conditioning (HVAC) systems when those systems are credited in the facility safety analysis. The description should include areas such as control facilities, wet storage bays, the auxiliary and radioactive waste areas and the ventilation systems for safety systems.

The safety significance of any HVAC system credited in the facility safety analysis should be clearly stated, including all common safety-related functionality dependencies such as the air conditioning system for an equipment room that may contain multiple divisions or groupings of support systems. For areas where emergency ventilation may be required for personnel safety, the appropriate requirements should be clearly identified and listed.

3.5.6 Waste treatment and control

The application should describe how the generation of radioactive and hazardous wastes is minimized, and how the wastes are characterized, controlled, handled, conditioned and disposed of.

The application should also describe how releases within the facility and to the environment will be monitored and controlled such that they remain within prescribed limits.

3.5.7 Control facilities

An application to construct, operate or decommission a facility, shall include a description of the facility control facilities, including any control rooms.

The description should cover the habitability systems, equipment, supplies and procedures that are in place to ensure that essential facility workers, including those in the control rooms, can remain at their posts and operate the facility safely in all operational states considered in the safety analysis.

No information regarding control facilities is required for an application to prepare a site.

3.5.8 Structure design

The application shall include relevant information on the design of the site layout and on civil engineering works and structures associated with the facility. Site and facility layout information

should include the buildings and structures (including the foundations) and access to all essential services required for both normal and emergency operation.

The application should describe the design principles, design basis requirements and criteria, and applicable codes and standards used in the design. The application should demonstrate that the safety margins are sufficient for the buildings and structures important to safety (for example, robustness against internal and external events). The application should clearly state and justify any deviation from applicable codes and standards or from other design requirements.

3.6 Fitness for service

3.6.1 General considerations

For an application to operate or decommission a facility, the applicant should identify all facility-wide asset management programs that ensure fitness for service of all equipment and services are available as per its design intent and are functioning within the operating limits and conditions identified in the facility's safety analysis. The application should identify all SSCs important to safety. The applicant may use an acceptable risk assessment methodology (for example, failure mode and effects analysis) in identifying frequency of maintenance and periodic inspection to ensure fitness for service of all equipment and SSCs.

No information for fitness for service is required for an application to prepare a site or to construct a facility.

3.6.2 Maintenance program

Information about the maintenance program is only required for an application to operate a facility. This information is not required for an application for a licence to prepare a site, to construct or to decommission a facility.

Maintenance activities include monitoring, inspecting, testing, assessing, calibrating, servicing, repairing and replacing parts. In general, maintenance programs should include preventative maintenance and corrective maintenance.

The application shall include a clearly defined maintenance program containing the proposed measures, policies, methods and procedures that provide direction for maintaining SSCs so that they remain capable of maintaining their functions, as described in design documents and safety analyses that are included in the facility licensing documentation.

The application should describe the processes for planning, monitoring, scheduling and executing work activities so that SSCs continue to perform the design intent and remain fit for service in the presence of degradation mechanisms.

The application should describe:

- preventive maintenance activities
- maintenance processes and record retention requirements
- corrective maintenance
- calibration of measuring and monitoring devices

- SSC monitoring, activity optimization
- work planning and scheduling
- work execution
- maintenance procedures
- post-maintenance verification and testing
- maintenance program assessment

3.6.3 Aging management program

For an application to operate or decommission a facility, the applicant should identify end-of-life testing and include a replacement plan for SSCs and major equipment (for example, calciners, flame reactors and sintering furnaces) to ensure that the equipment is performing as expected and that the equipment remains fit for service, if applicable. The application should include a plan to test for the structural integrity of major components to ensure fitness for service (for example, corrosion in pipes, wall thinning, stress cracks or fatigue). Regular monitoring, including any non-destructive testing for common aging-related circumstances, should also be provided in the application.

3.6.4 Periodic inspection and testing programs

An application to operate or decommission a facility should include periodic inspection and testing programs for SSCs relied upon for safety. Periodic inspection and testing programs require physical inspection and testing of SSCs to ensure availability and confirm that service-induced degradation has not increased the likelihood of a failure of a barrier against the release of radioactive or hazardous substances.

An application to operate or decommission a facility should state the codes and standards that the applicant intends to use as the basis of the design, inspection and testing programs. Regulatory acceptance of the proposed codes and standards will be considered as part of the application review process.

If applicable, an application to operate or decommission a facility should include a maintenance program for pressure boundary components as per a formal agreement with an authorized inspection agency, if applicable. The authorized inspection agency should be recognized by the CNSC as authorized to register designs and procedures, perform inspections and other functions as defined by CSA B51, *Boiler pressure vessel and pressure piping code* [26]. The program documents should describe baseline inspection activities implemented to establish the condition of an SSC at the time it was placed into service and describe periodic inspection activities spanning the intended operating life of the facility.

3.7 Radiation protection

3.7.1 General considerations

The application shall describe the approaches for meeting the requirements of the *Radiation Protection Regulations*.

The application shall include a radiation protection program. The application should demonstrate how the design of the radiation protection program is commensurate with any radiological hazards associated with, or encountered during, the licensed activity.

The application shall describe how radiological hazards will be monitored and controlled during the licensed activities, as applicable.

For additional information see:

- REGDOC-2.7.1, *Radiation Protection* [15], for detailed guidance for applicants and licensees on meeting regulatory expectations for radiation protection, including the development of radiation protection programs and action levels.
- REGDOC-2.7.2, *Dosimetry, Volume I: Ascertaining Occupational Dose* [27], for detailed guidance on ascertaining worker dose limits

3.8 Conventional health and safety

3.8.1 General considerations

In addition to requirements under the NSCA and regulations made under the NSCA, the conventional health and safety SCA also addresses the requirements of the *Canada Labour Code* and the *Canada Occupational Health and Safety Regulations* or, where applicable, other occupational health and safety legislation.

The applicant shall provide the name, form, characteristics and quantity of any hazardous substances that may be on the site while the activity to be licensed is carried on. The applicant should provide the scientific name of each hazardous substance. This information may be provided in summary format; for example, by providing a table of the hazardous substances and the information required for each substance (maximum quantity at any given time).

The application shall describe the program and implementation of policies to minimize risk to the health and safety of workers posed by conventional (non-radiological) hazards in the workplace, including the management of workplace safety hazards and the protection of personnel and equipment.

The application shall provide information detailing compliance to all applicable requirements under the *Canada Labour Code* or, where applicable, other occupational health and safety legislation at all jurisdictional levels, including all occupational exposure limits for all chemical compounds listed under its regulations.

Where possible, the applicant should indicate occupational exposure for acute exposure and chronic exposure.

For more information, see REGDOC-2.8.1, *Conventional Health and Safety* [28].

3.9 Environmental protection

3.9.1 General considerations

Licensees should demonstrate that their environmental protection measures consider the following:

- commensurate with the level of risk associated with the activity
- account for uncertainty by keeping all releases to the environment as low as reasonably achievable and apply the best available technology and techniques economically available
- implement corrective actions to eliminate the identified root causes and verify completion to prevent recurrence

The specific information to be provided for the environmental protection SCA as part of the application to prepare a site or construct a facility is determined as part of the impact or environmental assessment for the facility.

The application shall contain information regarding the effects on the environment and the health and safety of persons that may result from the activity to be licensed and the measures that will be taken to prevent or mitigate those effects.

The application shall include a comprehensive set of environmental protection measures, including an environmental risk assessment, environmental management systems and environmental monitoring program that meet all requirements, as applicable, of REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures* [4]. Supplemental information to REGDOC-2.9.1 is set out in the following sections.

The release of hazardous substances is regulated by the CNSC and other governmental authorities. The application should demonstrate compliance with applicable laws and regulations at all jurisdictional levels.

An application to prepare a site shall contain the proposed program to determine the environmental baseline characteristics of the site and the surrounding area.

An application to construct a facility shall contain a description of the environmental baseline characteristics of the site and surrounding area.

An application to operate shall contain the proposed measures, policies, methods and procedures for operating and maintaining the nuclear facility.

An application to operate a facility shall include proposed measures to prevent or mitigate the effects of accidental releases of nuclear substances and hazardous substances on the environment, the health and safety of persons. These proposed measures should:

- assist offsite authorities in planning and preparing to limit the effects of an accidental release
- notify offsite authorities of an accidental release or the imminence of an accidental release
- report information to offsite authorities in dealing with the effects of an accidental release
- test the implementation of the measures to prevent or mitigate the effects of an accidental release

3.9.2 Effluent and emissions control

If there are releases to the environment, the applicant should propose licensed release limits and environmental action levels that are performance-based. The effluent and emission control measures in place are used to inform the development of the licensed release limits and environmental action levels for the facility or activity being licensed.

An application to construct, operate or decommission a facility shall contain the proposed location(s) of points of release, the proposed maximum quantities and concentrations, and the anticipated volume and flow rate of releases of nuclear substances and hazardous substances into the environment, including their physical, chemical and radiological characteristics.

An application to construct, operate or decommission a facility shall contain the proposed measures to control releases of nuclear substances and hazardous substances into the environment.

3.9.3 Environmental management system

The application should describe the environmental management system established to ensure protection of the environment throughout the licensed activity or activities.

3.9.4 Assessment and monitoring

The application should describe the monitoring system established to cover all environmental monitoring activities on the site as identified in the environmental risk assessment (ERA).

3.9.5 Protection of people

The application shall identify and describe all the radiological and non-radiological aspects of site activities that could have environmental effects, including exposure to members of the public during the licensed activity.

All applicants should submit the technical basis for calculating the dose to the public from licensed activities.

An application to operate or decommission an existing facility shall include the maximum effective doses to the public resulting from activities conducted at the facility during the current licence period, should doses have been incurred.

3.9.6 Environmental risk assessment

The application should include an ERA. CSA N288.6, *Environmental risk assessments at Class I nuclear facilities and uranium mines and mills* [25], provides information on conducting ERAs.

If there is an existing ERA, the applicant should review the ERA, and update the information as necessary to reflect any changes to the site or facility.

3.10 Emergency management and fire protection

3.10.1 General considerations

This SCA includes conventional emergency and fire response. Fire protection operations, design and analysis are discussed in the appropriate SCA of operating performance, safety analysis and physical design.

The application shall describe an emergency preparedness program. The program should meet the requirements of REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response* [29], and CSA N393, *Fire protection for facilities that process, handle or store nuclear substances* [16].

The application shall describe the preparations that have been made to ensure that onsite and offsite emergencies will be dealt with safely and effectively.

3.10.2 Nuclear emergency preparedness and response

An application to operate or decommission a facility shall describe how the nuclear emergency program encompasses both emergency preparedness and emergency response measures as per REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response* [29].

No information about nuclear emergency preparedness and response is required for an application to prepare a site or construct a facility.

3.10.3 Conventional emergency preparedness and response

The application shall describe all non-radiological, non-routine conditions at the facility for which the emergency preparedness program has been established in accordance with REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response* [29].

3.10.4 Fire emergency preparedness and response

The applicant shall describe a comprehensive fire protection program that ensures the licensed activities do not result in unreasonable risk to the health and safety of persons and the environment due to fire. The program should meet the requirements of CSA N393, *Fire protection for facilities that process, handle or store nuclear substances* [16].

An application to operate a Class IB processing facility shall include information on arrangements with first responders, provisions for mutual support or aid, and interagency communication requirements. This information should be provided for the other lifecycle stages. If a memorandum of understanding is established with the first responders' agency, the same should be provided as part of the application.

3.11 Waste management

3.11.1 General considerations

The application shall contain a waste management program. The program should that meet the requirements of REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste* [30].

The application should demonstrate that the licensee will implement and maintain associated programs and procedures to support the waste management program (for example, waste characterization). These programs and procedures should be commensurate with the risk of the waste streams being managed.

The application shall provide the name, quantity, form, origin and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste. The applicant should provide the scientific name of each nuclear and hazardous substance. This information may be provided in summary format; for example, by providing a table of the nuclear and hazardous substances and the information required for each substance.

The application should demonstrate compliance with the six principles of radioactive waste management set out in REGDOC-2.11, *Framework for Radioactive Waste Management and Decommissioning in Canada* [31].

3.11.2 Waste characterization

An application to operate or decommission a facility should demonstrate that waste characterization will be performed at appropriate intervals during the management of radioactive waste. The application should meet the requirements of REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste* [30].

No information on waste characterization is required for an application to prepare a site or for a licence to construct a facility.

3.11.3 Waste minimization

An application to operate or decommission a facility should demonstrate how the waste hierarchy will be considered in the management of radioactive waste.

No information on waste minimization is required for an application to prepare site or construct a facility.

3.11.4 Waste management practices

An application to operate or decommission a facility should demonstrate that the licensee will:

- be responsible for the safe management of its radioactive waste, taking into consideration the health and safety of persons, the environment and national security
- optimize the steps in radioactive waste management and practices to ensure the protection of the health and safety of people and the environment
- take into account interdependencies among all steps in radioactive waste management, as appropriate; each step shall be evaluated as an individual step in the process and as part of an integrated radioactive waste management system
- produce and/or maintain records for each of the steps in the management of radioactive waste for which they are responsible

An application to operate or decommission a facility should contain the waste classification plan and the waste acceptance criteria, if applicable, that meet the requirements of REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste* [30].

No information on waste management practices is required for an application to prepare site or to construct a facility.

3.11.5 Decommissioning plans

The application shall contain the proposed plan for the decommissioning of the nuclear facility or of the site. Planning for decommissioning is an ongoing process that is considered at each lifecycle stage of the facility. Requirements and guidance on decommissioning are provided in REGDOC-2.11.2, *Decommissioning* [32].

A preliminary decommissioning plan (PDP) is required for an application to prepare a site, to construct or to operate a facility. The PDP should document:

- the selected decommissioning strategy
- main decontamination, dismantling and/or clean-up activities
- end-state objectives
- an overview of the principal hazards and protection strategies
- a waste management strategy
- a cost estimate
- financial guarantee arrangements

An application to decommission a site shall include a detailed decommissioning plan (DDP) This is not required for any other lifecycle stage. The DDP should document:

- the decommissioning strategy
- decontamination, dismantling and/or clean-up activities
- final end-state objectives
- the principal hazards and protection plans
- a waste management plan
- a cost estimate
- financial guarantee arrangement

More information on financial guarantees is found in section 4.18.2.

An application to decommission a facility should include a safety assessment, as described in REGDOC-2.11.2, *Decommissioning* [32], to identify any radiological or non-radiological hazards to workers, the environment and the public from both routine decommissioning activities and credible potential accidents during decommissioning. The safety assessment may be a stand-alone document or may be included in the detailed decommissioning plan. This safety analysis is not required for any other lifecycle stage.

3.12 Security

3.12.1 General considerations

An applicant who intends on processing, using or storing Category I or II nuclear material should consult with CNSC staff to identify additional relevant requirements for the site prior to submitting an application. Applications involving this material will be subject to Part 1 of the *Nuclear Security Regulations* and its associated prescribed regulatory documents. Additional relevant requirements include implementing a nuclear response force and addressing the design basis threat document for example.

Any information that is considered classified, protected, proprietary or personal, or that is designated as prescribed information should be clearly identified and submitted in accordance with the CNSC's *Guidance Document on Confidential Filings* [33].

For facilities requesting a licence in respect of Category III nuclear material, an application for licence shall contain the information required by section 3 of the *Nuclear Substances and Radiation Devices Regulations*. Further, it shall include a description of the measures to be taken to ensure compliance with subsection 7(3) and sections 7.1 and 7.2 of the *Nuclear Security Regulations*.

If the application proposes to process or store Category III nuclear material, an application to operate or decommission a facility shall contain a description of the physical protection measures to be taken to ensure compliance with sections 42 to 48 of the *Nuclear Security Regulations* in addition to the information required by sections 3 to 8 of the *Class I Nuclear Facilities Regulations*.

The application shall describe the general design approach and adequate provisions in place to control access and security at the facility.

The application shall describe the proposed measures for protecting prescribed information.

For an application to construct, operate or decommission a facility with nuclear substances meeting or exceeding the thresholds of Category 3 or higher as identified in REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material* [5], the applicant shall submit a site security plan. This site security plan shall provide detail on how the applicant will meet the requirements defined in that regulatory document, including the technical and administrative measures incorporated by the licensee.

An application to construct, operate or decommission a facility should describe a security program that meets the requirements of REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material* [5].

3.12.2 Response arrangements

For licensees subject to Part 2 of the *Nuclear Security Regulations*, an application to operate or decommission a facility shall describe how the security program ensures that offsite response arrangements effectively respond to the unauthorized removal of nuclear or radioactive material. The application should provide details regarding the applicant's arrangements for annual familiarization visits to the nuclear facility by members of the offsite response force. These arrangements should provide detail on the joint development of a contingency plan by the

licensee and the offsite response force to facilitate the offsite response force's effective intervention.

For applicants that process, use, store or transfer nuclear substances that meet or exceed the threshold of Category 3 nuclear substances, an application to operate or decommission a facility should include details regarding the notification of a local law enforcement agency as required in REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material* [5].

No information regarding response arrangements is required for an application to prepare a site or construct a facility.

3.12.3 Security practices

The application shall describe the measures in the security program that ensure administrative and technical measures are implemented, maintained and documented in a security program.

The applicant shall describe how access to prescribed assets is limited to those workers having the appropriate security clearance, facility site access clearance, or trustworthiness and reliability verification. Further, the application should identify a process to determine how a valid need-to-know basis will be utilized to determine access to prescribed assets as applicable to the site.

3.12.4 Security training and qualification

The application shall include adequate provisions indicating all persons with authorized access to sealed sources or prescribed information at the licensee's location are made aware of the facility's security policies, protocols and practices. These provisions shall identify how the security awareness program is documented and how it will be annually reviewed. The application shall also include details on the development of an assured process for ensuring new employees participate in security awareness training, and refresher training is conducted on a regular basis (every three years or less) for existing employees.

The application shall describe the duties of any security officers employed or contracted onsite. The applicant should demonstrate that the security officers are adequately equipped to perform their assigned duties and tasks. Additional information on this can be found in REGDOC-2.2.4, *Fitness for Duty, Volume III: Nuclear Security Officer Medical, Physical and Psychological Fitness* [34].

This should include the proposed measures for written procedures and instructions specific to:

- measures for controlling access to the licensed area
- surveillance foot and vehicle patrols
- assessment and response to alarms
- apprehension and detainment of unarmed intruders
- reporting of suspicious activities, including armed intruders, to the local law enforcement agency
- security equipment operation
- security training relating to assigned duties

For nuclear facilities subject to the *Nuclear Security Regulations*, the applicant shall describe their security awareness training and supervisory awareness program identifying that supervisors

are trained to recognize behavioural changes in all personnel, including contractors, that could pose a risk to security at a facility at which it carries on licensed activities.

3.12.5 Cyber security

The application should describe a cyber security program. The application should address internal and external cyber threats. The cyber security program should be reviewed and updated at each lifecycle phase as the threats become better known.

The application should describe how the cyber security program is designed, implemented and maintained as an effective program. The application should provide information on the following program elements, including:

- defensive strategy and security architecture
- policies and procedures
- asset identification and classification (not required for site preparation)
- roles and responsibilities of the involved parties
- security controls (not required for site preparation)
- awareness and training
- configuration management
- coordination with other programs
- incident response, reporting and recovery plan
- program review and maintenance
- lifecycle approach to cyber essential assets

3.13 Safeguards and non-proliferation

3.13.1 General considerations

In addition to requirements of regulations made under the NSCA, the safeguards and non-proliferation SCA addresses the requirements of the following safeguard agreements:

- IAEA INFCIRC/164, *Agreement between Government of Canada and IAEA for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons* [35]
- IAEA INFCIRC/164/Add.1, *Protocol Additional to the Agreement between Canada and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons* [36]

If a facility will have safeguarded material, then either before or concurrent with applying for a licence to construct a Class IB processing facility, the applicant shall complete and submit to the CNSC the IAEA safeguards design information questionnaire (available upon request from the CNSC). The CNSC encourages applicants to submit the completed questionnaire early, particularly for novel technologies where safeguards measures have not yet been developed. For more information, see REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy* [37].

If applicable, an application to construct, operate or decommission a facility shall describe how the arrangements address the requirements in REGDOC-2.13.2, *Import and Export* [38], and REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy* [37].

An application to construct, operate or decommission a facility should describe measures related to site buildings and structures, operational parameters and the flow and storage of nuclear material, from the facility's design and commissioning phases through to its decommissioning and eventual abandonment.

For Class 1B processing facilities, the non-proliferation program is limited to the tracking and reporting of foreign obligations and origins of nuclear material.

For the purposes of the application and its review, document ownership will vary between the IAEA, the CNSC and the applicant:

- the IAEA is responsible for the generic safeguards approach
- the CNSC is responsible for:
  - coordinating with the IAEA in developing the generic safeguards approach
  - negotiating the safeguards arrangements with the IAEA for the applicant facility
  - monitoring the applicant's compliance with safeguards documents, requirements and obligations
- the applicant is responsible for establishing and implementing the safeguards program

Where applicable, the export of nuclear substances, covered under *Nuclear Non-proliferation Import and Export Control Regulations*, a separate import/export licence must be obtained for the specific circumstances and destination.

No information about safeguards and non-proliferation is required for an application to prepare a site.

3.13.2 Nuclear accountancy and control

An application to construct, operate or decommission a facility should describe how the program ensures the collection, storage and reporting of information to the CNSC and IAEA. The application should describe measures to ensure that:

- nuclear materials are tracked
- reports are submitted to the CNSC on:
  - the inventory and transfer of nuclear material
  - the application of IAEA safeguards

An application to construct, operate or decommission a facility should describe adequate provisions for timely submission of accurate reports and information on nuclear material. Further information is available in REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy* [37].

No information about nuclear accountancy and control is required for an application to prepare a site.

3.13.3 Access and assistance to the IAEA

An application to construct, operate or decommission a facility should describe how the program ensures that the IAEA is able, upon request, to access the facility for inspections and other verification activities. Additionally, the application should describe how the program ensures that such activities are supported by facility workers and resources.

An application to construct, operate or decommission a facility should describe how the effectiveness of safeguards procedures, and assistance to the IAEA for site access and inspections, are reviewed.

No information about access and assistance to the IAEA is required for an application to prepare a site.

3.13.4 Operational and design information

An application to construct, operate or decommission a facility should describe:

- the processes that collect, store and report relevant operational information to the CNSC and the IAEA
- how the program ensures that the facility's design information questionnaire is complete and accurate
- how the program ensures that updates provided under the *Additional Protocol* are reported to the CNSC

An application to construct, operate or decommission a facility should also describe methods of development and implementation of an appropriate safeguards approach based on the facility's specific designs.

An application to construct, operate or decommission a facility should describe how the program engages both the CNSC and the IAEA to ensure a suitable safeguards approach is taken for its purpose.

The application should describe adequate provisions for the submission of:

- annual operational information
- accurate design information of facility structures
- processes and procedures

No safeguards operational and design information is required for an application to prepare a site.

3.13.5 Safeguards equipment, containment and surveillance

For an application to construct, operate or decommission a facility, the applicant should demonstrate that adequate resources (for example, power and lighting) are provided to IAEA equipment and that measures are in place for the protection of IAEA equipment and seals.

No information about safeguards equipment, containment and surveillance is required for an application to prepare a site.

3.14 Packaging and transport

In addition to requirements of regulations made under the NSCA, the packaging and transport SCA also addresses the requirements of the *Transportation of Dangerous Goods Regulations.*

3.14.1 Package design and maintenance

An application to operate or decommission a facility shall describe how the program ensures that all shipping packages are designed and maintained for the protection and containment of the quantities transported, as per the *Packaging and Transport of Nuclear Substances Regulations, 2015*, where applicable.

An application to operate or decommission a facility shall describe elements such as package certification, package testing, inspection and maintenance.

No information about package design and maintenance is required for an application to prepare a site or construct a facility.

3.14.2 Packaging and transport program

The application shall describe the measures in place to ensure compliance with all requirements of the *Packaging and Transport of Nuclear Substances Regulations, 2015* and the *Transportation of Dangerous Goods Regulations*.

An application to construct, operate or decommission a facility shall describe the measures to ensure that appropriate training is provided for workers involved in the handling, preparation for transport, and transport of dangerous goods, and that training certificates are issued to workers.

3.14.3 Registration for use

An application to operate or decommission a facility shall describe the measures in place to ensure that certified packages are registered for use prior to transport.

No information about registration for use is required for an application to prepare a site or a construct a facility.

3.15 Reporting

The application should include information on how the applicant intends to comply with the requirements found in REGDOC-3.1.2, *Reporting Requirements, Volume I: Non-Power Reactor Class I Facilities and Uranium Mines and Mills* [39].

3.16 Public information and disclosure program

The application shall contain a public and information disclosure program and should describe how it meets the requirements in REGDOC-3.2.1, *Public Information Disclosure* [40].

The application shall describe how and with what tools they will communicate with the public, particularly with those persons living in the vicinity of the site, and the general nature and characteristics of the anticipated effects on the environment and the health and safety of persons that may result from the proposed activities.

For new facilities, the application should demonstrate that ongoing engagement with appropriate parties has been continued from earlier lifecycle phases (for example, construction activities) and integrated into operational activities.

3.17 Indigenous engagement

The CNSC, as an agent of the Crown, has the responsibility for fulfilling Canada's legal duty to consult and, where appropriate, to accommodate Indigenous peoples when the CNSC's decisions may have had adverse effect on potential or established Indigenous or treaty rights. The CNSC is committed to meaningful ongoing engagement and consultation with Indigenous groups who have an interest in facilities and activities regulated by the CNSC.

REGDOC-3.2.2, *Indigenous Engagement* [41], provides guidance to applicants whose proposed projects may raise the Crown's duty to consult. While the CNSC cannot delegate its obligation, it can delegate procedural aspects of the consultation process to licensees, where appropriate. To meet CNSC obligations for consultation, the CNSC may use the information collected and measures proposed by licensees regarding avoiding, mitigating or offsetting adverse effects.

4. Standard application information

4.1 Statement of purpose

An applicant must complete a licence application when:

- requesting a new licence
- renewing, amending, replacing or revoking an existing CNSC licence

The application provides details for the licence, which will consequently authorize only specified activities. The applicant must provide:

- a description of any nuclear facility and any prescribed equipment or information to be encompassed by the licence
- information about all activities to be licensed, as described in any of paragraphs 26(a) to (f) of the NSCA, and their purpose

For a licence renewal, the activities requested in this application must match those currently listed on the existing CNSC licence.

This information may be provided in summary format, for example, by listing facilities, equipment or information.

4.2 Licence period

The applicant should state the requested licence period, in years or months. The licensee may request a specific licence period to match planned activities or anticipated change in status.

4.3 Description of site

The application must contain a description of the site of the activity to be licensed, including the location of any exclusion zone and any structures within that zone.

For Class I nuclear facilities, the applicant must provide plans showing the location, perimeter, areas, structures and systems of the facility.

4.4 Applicant's name and business address

The applicant must provide the applicant's name and business address.

The name must be that of the persons or organization applying for the licence, as it appears on the proof of legal status documentation, such as the proof of incorporation or sole proprietorship.

The applicant should name an individual, only if that person is a sole proprietor or will be solely responsible for the licence.

The business address must be the legal, physical address of the applicant's head office, including the complete street name and number, city, province or territory and postal code. A post office box number is not acceptable.

4.5 Mailing address

If the mailing address is different from the business address, the applicant must provide the mailing address, including the complete street name and number, city, province or territory and postal code.

If no address is provided, any licence issued in response to the application will be mailed to the head office address. A post office box number is acceptable as a mailing address.

4.6 Authority to act

The applicant must notify the Commission of the persons who have authority to act for them in their dealings with the Commission.

The applicant should provide a list of names, positions and contact information of all persons who are authorized by the applicant to interact with the CNSC.

Note: The applicant may request, for security reasons, this information be subject to confidentiality requirements.

4.7 Applicant authority

The applicant must provide the name, title and contact information (address, email address and telephone number) of the individual who has the legal signing authority for the application.

The signature of the applicant authority indicates that all statements and representations made in the application and on supplementary pages are binding on the applicant.

4.8 Proof of legal status

Applicants should provide proof of legal status by appending proof of incorporation, corporation number or charter. When submitting an application to renew, a revised proof of legal status should be provided if the applicant's original organization name has changed.

If the applicant is a corporation, the application should include the following information:

- corporation's legal name
- corporation number
- date of incorporation
- jurisdiction of incorporation
- registered office address (if different from the head office address)

4.9 Owner or authority for the site

The applicant must provide evidence that the applicant is the owner of the site or has authority from the owner of the site to carry on the activity to be licensed.

4.10 Other information

If applicable, the applicant should describe the relationship of this application to any previous licences issued by the CNSC for activities at this facility, including any changes to the licensing basis that were included in previous licences.

The applicant should reference any other CNSC licences that apply to the use of other nuclear substances and authorized activities conducted at the facility; for example, licences for nuclear substances and radiation devices, dosimetry service, and import/export of controlled nuclear and nuclear-related substances, equipment and information.

Where applicable, the applicant may provide supporting information, including:

- the results of experimental programs, tests or analyses (for example, results of manufacturers' material tests and qualification data)
- those that have been submitted to, received from, or published by a foreign national regulatory body
- information published by a national agency or an international nuclear agency

4.11 Cost recovery

Where applicable, the application must be accompanied by the appropriate regulatory fee as outlined in the *Canadian Nuclear Safety Commission Cost Recovery Fees Regulations*. Any questions can be addressed to the CNSC Cost Recovery Advisory Group.

4.12 Financial guarantees

The application must describe the financial guarantees for the costs of decommissioning the facility or licensed activity according to the NSCA and the *General Nuclear Safety and Control Regulations* (GNSCR). The applicant should also provide a cross-reference to the supporting document regarding the value and form of the financial guarantee.

For more information about financial guarantees and licensing, consult REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities* [42].

4.13 Billing contact person

The applicant must provide the following information for the person responsible for the licence fee payments:

- name
- position
- contact information (email, telephone, facsimile)
- mailing address, if different from the business address

4.14 Notification

The applicant must notify the CNSC within 15 days of any changes to the contact names identified in the application.

4.15 Structuring the application

The application may be completed in either of Canada's official languages. The applicant may choose to organize the information in any structure. However, the applicant is encouraged to organize the licence application according to the SCA framework to facilitate CNSC staff review. The CNSC uses SCAs as the technical topics to assess, review, verify and report on regulatory requirements and performance across all regulated facilities and activities, as outlined in REGDOC-3.5.3, *Regulatory Fundamentals* [3]. This REGDOC also contains information on licensing and certification, including the licensing basis and other key regulatory concepts, such as the graded approach.

4.16 Submitting the application

The applicant must ensure that the application is complete, dated and signed by the appropriate authority, that all supporting documents are clearly identified and cross-referenced and submitted in a secure format to the CNSC Registry at registry-greffe@cnsc-ccsn.gc.ca.

If the applicant chooses to submit the licence application in printed format, the applicant should provide two signed and dated printed copies of the application to:

Canadian Nuclear Safety Commission
280 Slater Street
P.O. Box 1046, Station B
Ottawa, ON K1P 5S9
Canada

All information submitted is subject to the *Access to Information Act* and the *Privacy Act*. The applicant must identify, with justification, any material that is subject to confidentiality requirements and not suitable for public disclosure. Any information that is submitted may be presented to the Commission to support the licensing decision. Any such information is also made available to the public upon request, in total or in a redacted form, according to the CNSC's legal obligations.

The applicant must keep a record of all licence information, as required by section 27 of the GNSCR.

The CNSC may request additional information from the applicant to further substantiate claims made in the application or to address any gaps found in the application.

Appendix A: Reference Documents by Safety and Control Area

The CNSC's regulatory requirements and expectations are organized into 14 SCAs, which are subdivided into specific areas.

Table 1 outlines each SCA, their specific areas and the reference materials relevant to the licensing of a Class IB processing facility.

Table 1: Applicable reference documents by SCA and specific area

Safety and control area	Specific area	Standard(s) or regulatory documents
Management system	Management system	CSA N286, *Management system requirements for nuclear facilities* [6]
	Organization	CSA N286, *Management system requirements for nuclear facilities* [6]
	Performance assessment, improvement and management review	CSA N286, *Management system requirements for nuclear facilities* [6]
	Operating experience, Problem identification and resolution	CSA N286, *Management system requirements for nuclear facilities* [6]
	Change management	CSA N286, *Management system requirements for nuclear facilities* [6]
	Safety culture	REGDOC-2.1.2, *Safety Culture* [7] CSA N286, *Management system requirements for nuclear facilities* [6]
	Configuration management	CSA N286, *Management system requirements for nuclear facilities* [6]
	Records management	CSA N286, *Management system requirements for nuclear facilities* [6]

Safety and control area	Specific area	Standard(s) or regulatory documents
	Business continuity	CSA N286, *Management system requirements for nuclear facilities* [6]
Human performance management	Human performance program	CSA N286, *Management system requirements for nuclear facilities* [6]
	Personnel training	REGDOC-2.2.2, *Personnel Training* [8] CSA N286, *Management system requirements for nuclear facilities* [6]
	Work organization and job design	REGDOC-2.2.5, *Minimum Staff Complement* [9] REGDOC-2.5.1, *General Design Considerations: Human Factors* [10]
	Fitness for duty	REGDOC-2.2.4, *Fitness for Duty: Managing Worker Fatigue* [11] REGDOC-2.2.4, *Fitness for Duty, Volume II: Managing Alcohol and Drug Use* [12] REGDOC-2.2.4, *Fitness for Duty, Volume III: Nuclear Security Officer Medical, Physical and Psychological Fitness* [34] REGDOC-2.2.5, *Minimum Staff Complement* [9]

Safety and control area	Specific area	Standard(s) or regulatory documents
Operating performance	Conduct of licensed activities	REGDOC-2.2.5, *Minimum Staff Complement* [9] REGDOC-2.4.4, *Safety Analysis for Class IB Nuclear Facilities* [13] REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures* [4] REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy* [37] CSA N286, *Management system requirements for nuclear facilities* [6] CSA N288.1, *Guidelines for modelling radionuclide environmental transport, fate, and exposure associated with the normal operation of nuclear facilities* [43] CSA N288.4, *Environmental monitoring programs at nuclear facilities and uranium mines and mills* [44] CSA N288.5, *Effluent and emissions monitoring programs at nuclear facilities* [45] CSA N292.3, *Management of low- and intermediate-level radioactive waste* [46] CSA N294, *Decommissioning of facilities containing nuclear substances* [47] CSA B51, *Boiler, pressure vessel, and pressure piping code* [26]
	Procedures	REGDOC-2.2.5, *Minimum Staff Complement* [9] REGDOC-2.5.1, *General Design Considerations: Human Factors* [10] REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy* [37] REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities* [42] CSA N286, *Management system requirements for nuclear facilities* [6] CSA N288.1, *Guidelines for modelling radionuclide environmental transport, fate, and exposure associated with the normal operation of nuclear facilities* [43] CSA N288.4, *Environmental monitoring programs at nuclear facilities and uranium mines and mills* [44]

Safety and control area	Specific area	Standard(s) or regulatory documents
		CSA N288.5, *Effluent and emissions monitoring programs at nuclear facilities* [45] CSA N292.3, *Management of low- and intermediate-level radioactive waste* [46] CSA B51, *Boiler, pressure vessel, and pressure piping code* [26]
	Reporting and trending	REGDOC-3.1.2, *Reporting Requirements, Volume I: Non-Power Reactor Class I Facilities and Uranium Mines and Mills* [39] CSA N286, *Management system requirements for nuclear facilities* [6] CSA N288.1, *Guidelines for modelling radionuclide environmental transport, fate, and exposure associated with the normal operation of nuclear facilities* [43] CSA N288.4, *Environmental monitoring programs at nuclear facilities and uranium mines and mills* [44] CSA N288.5, *Effluent and emissions monitoring programs at nuclear facilities* [45]
Safety analysis	Criticality safety	REGDOC-2.4.4, *Safety Analysis for Class IB Nuclear Facilities* [13] REGDOC-2.5.1, *General Design Considerations: Human Factors* [10]
	Deterministic safety analysis	REGDOC-2.4.4, *Safety Analysis for Class IB Nuclear Facilities* [13]
Physical design	Design governance	REGDOC-2.5.1, *General Design Considerations: Human Factors* [10] CSA N286, *Management system requirements for nuclear facilities* [6] CSA N393, *Fire protection for facilities that process, handle or store nuclear substances* [16] CSA B51, *Boiler, pressure vessel, and pressure piping code* [26] ISO 13485, *Medical devices – Quality management systems – Requirements for regulatory purposes* [24]

Safety and control area	Specific area	Standard(s) or regulatory documents
	Site characterization	REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures* [4] CSA N288.6, *Environmental risk assessments at Class I nuclear facilities and uranium mines and mills* [25] SSR-1, *Site Evaluation for Nuclear Installations* [17] SSR-4, *Safety of Nuclear Fuel Cycle Facilities* [1] SSG-5, *Safety of Conversion Facilities and Uranium Enrichment Facilities* [18] SSG-6, *Safety of Uranium Fuel Fabrication Facilities* [19] SSG-7, *Safety of Uranium and Plutonium Mixed Oxide Fuel Fabrication Facilities* [20] SSG-42, *Safety of Nuclear Fuel Reprocessing Facilities* [21] SSG-43, *Safety of Nuclear Fuel Cycle Research and Development Facilities* [22]
	Facility design	REGDOC-2.5.6, *Design of Rooms Where Unsealed Nuclear Substances Are Handled* [23] REGDOC-2.5.1, *General Design Considerations: Human Factors* [10] REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures* [4] CSA N393, *Fire protection for facilities that process, handle or store nuclear substances* [16] CSA N288.6, *Environmental risk assessments at Class I nuclear facilities and uranium mines and mills* [25] CSA B51, *Boiler, pressure vessel, and pressure piping code* [26] SSR-1, *Site Evaluation for Nuclear Installations* [17] SSR-4, *Safety of Nuclear Fuel Cycle Facilities* [1] SSG-5, *Safety of Conversion Facilities and Uranium Enrichment Facilities* [18] SSG-6, *Safety of Uranium Fuel Fabrication Facilities* [19]

Safety and control area	Specific area	Standard(s) or regulatory documents
		SSG-7, *Safety of Uranium and Plutonium Mixed Oxide Fuel Fabrication Facilities* [20] SSG-42, *Safety of Nuclear Fuel Reprocessing Facilities* [21] SSG-43, *Safety of Nuclear Fuel Cycle Research and Development Facilities* [22]
	Structure design	CSA N393, *Fire protection for facilities that process, handle or store nuclear substances* [16] CSA B51, *Boiler, pressure vessel, and pressure piping code* [26] SSR-1, *Site Evaluation for Nuclear Installations* [17] SSR-4, *Safety of Nuclear Fuel Cycle Facilities* [1] SSG-5, *Safety of Conversion Facilities and Uranium Enrichment Facilities* [18] SSG-6, *Safety of Uranium Fuel Fabrication Facilities* [19] SSG-7, *Safety of Uranium and Plutonium Mixed Oxide Fuel Fabrication Facilities* [20] SSG-42, *Safety of Nuclear Fuel Reprocessing Facilities* [21] SSG-43, *Safety of Nuclear Fuel Cycle Research and Development Facilities* [22]
	System design	CSA B51, *Boiler, pressure vessel, and pressure piping code* [26] SSR-1, *Site Evaluation for Nuclear Installations* [17] SSR-4, *Safety of Nuclear Fuel Cycle Facilities* [1] SSG-5, *Safety of Conversion Facilities and Uranium Enrichment Facilities* [18] SSG-6, *Safety of Uranium Fuel Fabrication Facilities* [19] SSG-7, *Safety of Uranium and Plutonium Mixed Oxide Fuel Fabrication Facilities* [20] SSG-42, *Safety of Nuclear Fuel Reprocessing Facilities* [21]

Safety and control area	Specific area	Standard(s) or regulatory documents
		SSG-43, *Safety of Nuclear Fuel Cycle Research and Development Facilities* [22]
	Component design	CSA B51, *Boiler, pressure vessel, and pressure piping code* [26] SSR-1, *Site Evaluation for Nuclear Installations* [17] SSR-4, *Safety of Nuclear Fuel Cycle Facilities* [1] SSG-5, *Safety of Conversion Facilities and Uranium Enrichment Facilities* [18] SSG-6, *Safety of Uranium Fuel Fabrication Facilities* [19] SSG-7, *Safety of Uranium and Plutonium Mixed Oxide Fuel Fabrication Facilities* [20] SSG-42, *Safety of Nuclear Fuel Reprocessing Facilities* [21] SSG-43, *Safety of Nuclear Fuel Cycle Research and Development Facilities* [22]
Fitness for service	Maintenance	CSA N286, *Management system requirements for nuclear facilities* [6] CSA N393, *Fire protection for facilities that process, handle or store nuclear substances* [16]
	Aging management	CSA N393, *Fire protection for facilities that process, handle or store nuclear substances* [16]
	Periodic inspection and testing programs	CSA B51, *Boiler, pressure vessel, and pressure piping code* [26]
Radiation protection	Application of ALARA	REGDOC-2.7.1, *Radiation Protection* [15]

Safety and control area	Specific area	Standard(s) or regulatory documents
	Worker dose control	REGDOC-2.7.1, *Radiation Protection* [15] REGDOC 2.7.2, *Dosimetry, Volume I* [27]
	Radiation protection program performance	REGDOC-2.7.1, *Radiation Protection* [15] REGDOC 2.7.2, *Dosimetry, Volume I* [27]
	Radiological hazard control	REGDOC-2.7.1, *Radiation Protection* [15]
Conventional health and safety	Performance, practices and awareness	REGDOC-2.8.1, *Conventional Health and Safety* [28]
Environmental protection	Effluent and emissions control (releases)	REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures* [4] CSA N288.1, *Guidelines for modelling radionuclide environmental transport, fate, and exposure associated with the normal operation of nuclear facilities* [43] CSA N288.4, *Environmental monitoring programs at nuclear facilities and uranium mines and mills* [44] CSA N288.5, *Effluent and emissions monitoring programs at nuclear facilities* [45] CSA N288.6, *Environmental risk assessments at Class I nuclear facilities and uranium mines and mills* [25]
	Environmental management system (EMS)	REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures* [4] CSA N288.1, *Guidelines for modelling radionuclide environmental transport, fate, and exposure associated with the normal operation of nuclear facilities* [43] CSA N288.4, *Environmental monitoring programs at nuclear facilities and uranium mines and mills* [44] CSA N288.5, *Effluent and emissions monitoring programs at nuclear facilities* [45]

Safety and control area	Specific area	Standard(s) or regulatory documents
		CSA N288.6, *Environmental risk assessments at Class I nuclear facilities and uranium mines and mills* [25]
	Assessment and monitoring	REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures* [4] CSA N288.1, *Guidelines for modelling radionuclide environmental transport, fate, and exposure associated with the normal operation of nuclear facilities* [43] CSA N288.4, *Environmental monitoring programs at nuclear facilities and uranium mines and mills* [44] CSA N288.5, *Effluent and emissions monitoring programs at nuclear facilities* [45] CSA N288.6, *Environmental risk assessments at Class I nuclear facilities and uranium mines and mills* [25]
	Protection of people	REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures* [4] REGDOC-2.7.1, *Radiation Protection* [15] CSA N288.1, *Guidelines for modelling radionuclide environmental transport, fate, and exposure associated with the normal operation of nuclear facilities* [43] CSA N288.4, *Environmental monitoring programs at nuclear facilities and uranium mines and mills* [44] CSA N288.5, *Effluent and emissions monitoring programs at nuclear facilities* [45] CSA N288.6, *Environmental risk assessments at Class I nuclear facilities and uranium mines and mills* [25]
	Environmental risk assessment	REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures* [4] CSA N288.1, *Guidelines for modelling radionuclide environmental transport, fate, and exposure associated with the normal operation of nuclear facilities* [43]

Safety and control area	Specific area	Standard(s) or regulatory documents
		CSA N288.4, *Environmental monitoring programs at nuclear facilities and uranium mines and mills* [44] CSA N288.5, *Effluent and emissions monitoring programs at nuclear facilities* [45] CSA N288.6, *Environmental risk assessments at Class I nuclear facilities and uranium mines and mills* [25]
Emergency management and fire protection	Conventional emergency preparedness and response	REGDOC-2.2.2, *Personnel Training* [8] REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response* [29] CSA N393, *Fire protection for facilities that process, handle or store nuclear substances* [16]
	Nuclear emergency preparedness and response	REGDOC-2.2.2, *Personnel Training* [8] REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response* [29]
	Fire emergency preparedness and response	REGDOC-2.2.2, *Personnel Training* [8] REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response* [29] CSA N393, *Fire protection for facilities that process, handle or store nuclear substances* [16]
Waste management	Waste characterization	REGDOC-2.11.1, *Waste Management*, Volume I [30] CSA N292.3, *Management of low- and intermediate-level radioactive waste* [46]
	Waste minimization	REGDOC-2.11.1, *Waste Management*, Volume I [30] CSA N292.3, *Management of low- and intermediate-level radioactive waste* [46]
	Waste management practices	REGDOC-2.11, *Framework for Radioactive Waste Management and Decommissioning* [31]

Safety and control area	Specific area	Standard(s) or regulatory documents
		REGDOC-2.11.1, *Waste Management*, Volume I [30] CSA N292.3, *Management of low- and intermediate-level radioactive waste* [46]
	Decommissioning plans	REGDOC-2.11.2, *Decommissioning* [32] REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities* [42] CSA N294, *Decommissioning of facilities containing nuclear substances* [47]
Security	Response arrangements	REGDOC-2.2.4, *Fitness for Duty, Volume III: Nuclear Security Officer Medical, Physical and Psychological Fitness* [34] REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Materials* [5]
	Security practices	REGDOC-2.2.4, *Fitness for Duty, Volume III: Nuclear Security Officer Medical, Physical and Psychological Fitness* [34] REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Materials* [5] IAEA NSS 35-G, *Security During the Lifetime of a Nuclear Facility* [48]
	Cyber security	REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Materials* [5] CSA N290.7, *Cyber security for nuclear facilities* [49]
Safeguards and non-proliferation	Nuclear material accountancy and control	REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy* [37] REGDOC-2.13.2, *Import and Export* [38] IAEA INFCIRC/164 *Agreement between Government of Canada and IAEA for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons* IAEA [35] IAEA INFCIRC/164/Add.1, *Protocol Additional to the Agreement between Canada and the International Atomic Energy Agency for the Application of*

Safety and control area	Specific area	Standard(s) or regulatory documents
		Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons [36]
	Access and assistance to the IAEA	REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy* [37] REGDOC-2.13.2, *Import and Export* [38] IAEA INFCIRC/164 *Agreement between Government of Canada and IAEA for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons* IAEA [35] IAEA INFCIRC/164/Add.1, *Protocol Additional to the Agreement between Canada and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons* [36]
	Operational and design information	REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy* [37] REGDOC-2.13.2, *Import and Export* [38] IAEA INFCIRC/164 *Agreement between Government of Canada and IAEA for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons* IAEA [35] IAEA INFCIRC/164/Add.1, *Protocol Additional to the Agreement between Canada and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons* [36]
	Safeguards equipment, containment and surveillance	REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy* [37] IAEA INFCIRC/164 *Agreement between Government of Canada and IAEA for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons* IAEA [35] IAEA INFCIRC/164/Add.1, *Protocol Additional to the Agreement between Canada and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons* [36]
Packaging and transport	Package design and maintenance	IAEA SSR-6, *Regulations for the Safe Transport of Radioactive Material* [50]

Glossary

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

References

The CNSC may include references to information on best practices and standards such as those published by CSA Group. With permission of the publisher, CSA Group, all nuclear-related CSA standards may be viewed at no cost through the CNSC Web page "How to gain free access to all nuclear-related CSA standards".

1. International Atomic Energy Agency (IAEA), Specific Safety Requirements No. SSR-4 *Safety of Nuclear Fuel Cycle Facilities*, Vienna, Austria, 2017.

2. CNSC, REGDOC-3.5.1, *Licensing Process for Class I Nuclear Facilities and Uranium Mines and Mills*, Ottawa, Canada, 2017.

3. CNSC, REGDOC-3.5.3, *Regulatory Fundamentals*, Ottawa, Canada, 2023.

4. CNSC, REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures*, Ottawa, Canada, 2017.

5. CNSC, REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Materials*, Ottawa, Canada, 2020.

6. CSA Group, CSA N286:12 (R2022), *Management system requirements for nuclear facilities*, Toronto, Canada, 2012.

7. CNSC, REGDOC-2.1.2, *Safety Culture*, Ottawa, Canada, 2018.

8. CNSC, REGDOC-2.2.2, *Personnel Training*, Ottawa, Canada, 2016.

9. CNSC, REGDOC-2.2.5, *Minimum Staff Complement*, Ottawa, Canada, 2019.

10. CNSC, REDOC-2.5.1, *General Design Considerations: Human Factors*, Ottawa, Canada, 2019.

11. CNSC, REGDOC-2.2.4, *Fitness for Duty: Managing Worker Fatigue*, Ottawa, Canada, 2017.

12. CNSC, REGDOC-2.2.4, *Fitness for Duty, Volume II: Managing Alcohol and Drug Use*, Ottawa, Canada, 2017.

13. CNSC, REGDOC-2.4.4, *Safety Analysis for Class IB Nuclear Facilities*, Ottawa, Canada, 2022.

14. CNSC, REGDOC-2.4.3, *Nuclear Criticality Safety*, Ottawa, Canada, 2019.

15. CNSC, REGDOC-2.7.1, *Radiation Protection*, Ottawa, Canada, 2021.

16. CSA Group, CSA N393:13, *Fire protection for facilities that process, handle or store nuclear substances*, Toronto, Canada, 2013.

17. IAEA, Specific Safety Requirements No. SSR-1 *Site Evaluation for Nuclear Installations*, Vienna, Austria, 2019.

18. IAEA, Specific Safety Guide No. SSG-5, *Safety of Conversion Facilities and Uranium Enrichment Facilities*, Vienna, Austria, 2010.

19. IAEA, Specific Safety Guide No. SSG-6, *Safety of Uranium Fuel Fabrication Facilities*, Vienna, Austria, 2010.

20. IAEA, Specific Safety Guide No. SSG-7, *Safety of Uranium and Plutonium Mixed Oxide Fuel Fabrication Facilities*, Vienna, Austria, 2010.

21. IAEA, Specific Safety Guide No. SSG-42, *Safety of Nuclear Fuel Reprocessing Facilities*, Vienna, Austria, 2017.

22. IAEA, Specific Safety Guide No. SSG-43, *Safety of Nuclear Fuel Cycle Research and Development Facilities*, Vienna, Austria, 2017.

23. CNSC, REGDOC-2.5.6, *Design of Rooms Where Unsealed Nuclear Substances Are Used*, Ottawa, Canada, 2023.

24. International Organization for Standardization, ISO 13485, *Medical devices – Quality management systems – Requirements for regulatory purposes*, London, United Kingdom, 2016.

25. CSA Group, CSA N288.6-12 (R2017), *Environmental risk assessments at Class I nuclear facilities and uranium mines and mills*, Toronto, Canada, 2012.

26. CSA Group, CSA B51:19, *Boiler, pressure vessel, and pressure piping code*, Toronto, Canada, 2019.

27. CNSC, REGDOC-2.7.2, *Dosimetry, Volume I: Ascertaining Occupational Dose*, Ottawa, Canada, 2021

28. CNSC, REGDOC-2.8.1, *Conventional Health and Safety*, Ottawa, Canada, 2019.

29. CNSC, REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response*, Ottawa, Canada, 2017.

30. CNSC, REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste*, Ottawa, Canada, 2021.

31. CNSC, REGDOC-2.11, *Framework for Radioactive Waste Management and Decommissioning in Canada*, Ottawa, Canada, 2021.

32. CNSC, REGDOC-2.11.2, *Decommissioning*, Ottawa, Canada, 2021.

33. CNSC, *Guidance Document on Confidential Filings*, Ottawa, Canada, 2014.

34. CNSC, REGDOC-2.2.4, *Fitness for Duty, Volume III: Nuclear Security Officer Medical, Physical, and Psychological Fitness*, Ottawa, Canada, 2018

35. IAEA, *Agreement between Government of Canada and IAEA for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons* IAEA, INFCIRC/164, Vienna, Austria, 1972.

36. IAEA, *Protocol Additional to the Agreement between Canada and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons*, IAEA INFCIRC/164/Add 1, Vienna, Austria, 2000.

37. CNSC, REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*, Ottawa, Canada, 2018.

38. CNSC, REGDOC-2.13.2, *Import and Export*, Ottawa, Canada, 2018.

39. CNSC, REGDOC-3.1.2, *Reporting Requirements, Volume I: Non-Power Reactor Class I Facilities and Uranium Mines and Mills*, Ottawa, Canada, 2018.

40. CNSC, REGDOC-3.2.1, *Public Information and Disclosure*, Ottawa, Canada, 2018.

41. CNSC, REGDOC-3.2.2, Indigenous Engagement, Ottawa, Canada, 2018.

42. CNSC, REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*, Ottawa, Canada, 2021.

43. CSA Group, CSA N288.1:20, *Guidelines for modelling radionuclide environmental transport, fate, and exposure associated with the normal operation of nuclear facilities*, Toronto, Canada, 2020

44. CSA Group, CSA N288.4:19, *Environmental monitoring programs at nuclear facilities and uranium mines and mills*, Toronto, Canada, 2019

45. CSA Group, CSA N288.5:22, *Effluent and emissions monitoring programs at nuclear facilities*, Toronto, Canada, 2022

46. CSA Group, CSA N292.3-14, *Management of low- and intermediate-level radioactive waste*, Toronto, Canada, 2014

47. CSA Group, CSA N294:19, *Decommissioning of facilities containing nuclear substances*, Toronto, Canada, 2019

48. IAEA, Nuclear Security Series No. 35-G, *Security During the Lifetime of a Nuclear Facility*, Vienna, Austria, 2019.

49. CSA Group, CSA N290.7:21, *Cyber security for nuclear facilities*, Toronto, Canada, 2021

50. IAEA, Safety Standards Series No. SSR-6 (Rev. 1), *Regulations for the Safe Transport of Radioactive Material*, Vienna, Austria, 2018.

CNSC Regulatory Document Series

Facilities and activities within the nuclear sector in Canada are regulated by the CNSC. In addition to the *Nuclear Safety and Control Act* and associated regulations, these facilities and activities may also be required to comply with other regulatory instruments such as regulatory documents or standards.

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1.0 Regulated facilities and activities

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1.2 Class IB facilities
1.3 Uranium mines and mills
1.4 Class II facilities
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1.6 Nuclear substances and radiation devices

2.0 Safety and control areas

Series 2.1 Management system
2.2 Human performance management
2.3 Operating performance
2.4 Safety analysis
2.5 Physical design
2.6 Fitness for service
2.7 Radiation protection
2.8 Conventional health and safety
2.9 Environmental protection
2.10 Emergency management and fire protection
2.11 Waste management
2.12 Security
2.13 Safeguards and non-proliferation
2.14 Packaging and transport

3.0 Other regulatory areas

Series 3.1 Reporting requirements
3.2 Public and Indigenous engagement
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