

Regulatory Framework for Dams in Canada's Nuclear Industry



The regulatory framework for dams in Canada's nuclear industry consists of laws passed by Parliament that govern the regulation of Canada's nuclear industry, and of the regulations, licences and regulatory documents that are used to regulate the industry.

Legislation: The [*Nuclear Safety and Control Act*](#) (NSCA) is the enabling legislation for the regulatory framework. The NSCA came into force on May 31, 2000, when it replaced the *Atomic Energy Control Act*. It established the Canadian Nuclear Safety Commission (CNSC) and set out the CNSC's mandate, responsibilities and powers. The NSCA provides the CNSC with the authority to regulate the development, production and use of nuclear energy and the production, possession and use of nuclear substances, prescribed equipment and prescribed information in Canada. Regulations made under the NSCA are legally binding.

Regulator: The CNSC is Canada's nuclear regulatory body, created under the NSCA. The CNSC's mission is to regulate the use of nuclear energy and materials to protect health, safety, security and the environment; to implement Canada's international commitments on the peaceful use of nuclear energy; and to disseminate objective scientific, technical and regulatory information to the public. The CNSC is a federal regulatory agency and an independent, quasi-judicial administrative tribunal set up at arm's length from the government, with no ties to the nuclear industry.

Requirements and guidance: The CNSC is committed to providing regulatory instruments that make its expectations clear. At the CNSC, published regulatory documents are considered to be living documents subject to regular review. Consultation with the public, Indigenous groups and other stakeholders is an important part of the process in the development of regulatory tools and the framework. Regulatory documents are a key part of the CNSC's regulatory framework and cover two broad areas: requirements and guidance on requirements. Requirements are mandatory. Licensees or applicants must meet these requirements to obtain or retain a licence or certificate to use nuclear materials or operate a nuclear facility. Guidance provides direction to licensees and applicants on how to meet requirements. Guidance may also provide information about approaches used by CNSC staff to evaluate specific issues or data during the review of licence applications. Licensees are expected to review and consider guidance; if this guidance is not being followed, the licensees should explain how an alternate approach they have chosen still meets regulatory requirements.

Regulating dams under the NSCA: Dams at Canada's nuclear facilities and sites are regulated through the CNSC's licensing and compliance activities. This CNSC oversight is based on a risk-informed approach and conducted to obtain assurance that the dams are designed appropriately and maintained with adequate provision for dam safety and for protection of the health and safety of



persons and the environment. The licensing process starts when an application or letter of intent for a nuclear activity or facility is received. A licence will be issued only if the CNSC has determined that the applicant is qualified to carry out the licensed activities and will make adequate provision for the protection of the environment, the health and safety of persons, the maintenance of national security, and measures required to implement international obligations to which Canada has agreed.

As part of a licence application, the applicants are expected to submit the design of the dams if they are included as components of a facility or site. The CNSC reviews this design before approving dam construction and performs site inspections during construction to verify that the design specifications are being met. CNSC staff maintain scientific and regulatory excellence in the field of geoscience with expertise of geology, geotechnical engineering, hydrology and hydrogeology that are used to conduct assessments of dam design and dam safety. During the licence term, CNSC compliance verification activities, enforcement and reporting on events and changes are in place to ensure that CNSC licensees comply with their obligations. Compliance verification is conducted through site inspections, and the review of operational activities and licensee documentation. Licensees are required to report routine dam performance and unusual occurrences in a timely manner. While varying degrees of routine inspections are conducted throughout the year on the dam structure, a dam geotechnical inspection is conducted annually by a professional geotechnical engineer on behalf of the licensee. The inspection reports are submitted to the CNSC for review and follow-up when necessary. CNSC staff also conduct periodic inspections to verify dam safety and performance.

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