

IRRS Good Practices

Regulations and Guidance (Module 9)

Regulations and guides for nuclear power plants

Canada – Initial Mission

Mission Date: September 2019

Good Practice

The Canadian Nuclear Safety Commission (CNSC) proactively developed extensive guidance and processes to assist potential applicants determine the content of the SMR application.

Observation

Small Modular Reactors might have a significantly different demonstration of safety than existing reactors. CNSC provided guidance on pre-application opportunities to ensure vendors understand the regulatory requirements and to provide them with an appropriate application assessment strategy that included a risk-informed assessment of the Safety and Control Areas (SCAs) and the use of alternative approaches in the development of the licensing application.

Basis

GSR Part 1 Requirement 24, para. 4.34 states that “*The regulatory body shall issue guidance on the format and content of the documents to be submitted by the applicant in support of an application for an authorization*”.

IAEA Comments/Highlights

With regard to the format and contents of documents to be submitted to the CNSC, the regulatory documents for reactors were generally written to apply to all water-cooled reactor designs. Recognizing that innovations in technology were producing small modular reactor designs (both water-cooled and non-water cooled) with low potential consequences and self-regulating passive systems, the CNSC proactively published supplemental guidance for small modular reactor proponents. This guidance offered pre-application opportunities, including a vendor design review that helped the vendors understand the regulatory requirements, and, for potential applicants, a CNSC process to determine an appropriate application assessment strategy for the proposed activity that involved the construction and operation of a specific design. In this process, the CNSC worked with a potential applicant to provide clarification on

preparing a licence application to include risk-informed assessments of the Safety and Control Areas (SCAs) and the use of alternative approaches in the development of the licensing application, and in addressing the regulations and criteria in regulatory documents. These initiatives helped to ensure that the application contained the appropriate level of detail and that the staff was prepared to perform their assessment in a risk-informed manner specific to that design.