Canadian Nuclear Safety Commission
Commission canadienne de sûreté nucléaire

CNSC Framework for the Regulation of Licensees' Supply Chain

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Canada

CNSC Regulation of Management Systems

"The licensee is responsible for safety"
"Performance Based Regulation"
"Trust and Verify"

Licence Condition:

1. Management System

1.1 "The licensee shall implement and maintain a management system"

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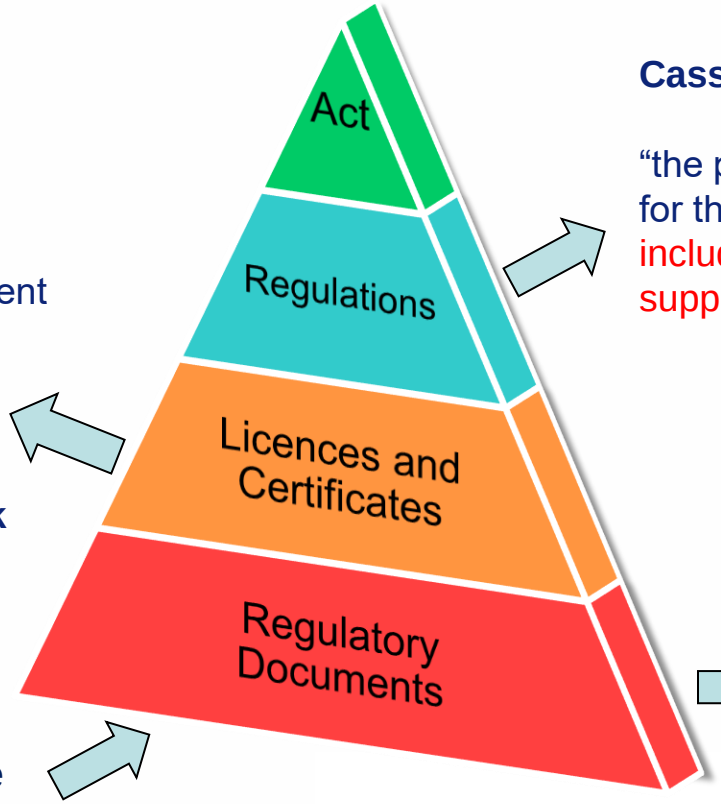
Licence Condition Handbook

SCA- Management System

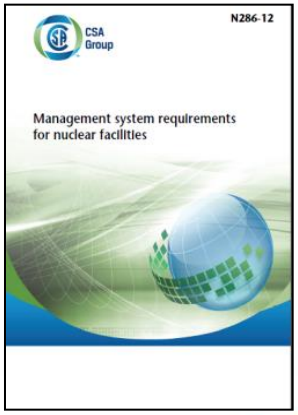
Performance Objective

Management System Requirements and Compliance Verification Criteria



Cass 1 Regulations….

"the proposed management system for the activity to be licensed" including measures to promote and support safety culture



CSA N286

CSA N286-12 "Management System Requirements for Nuclear Facilities"

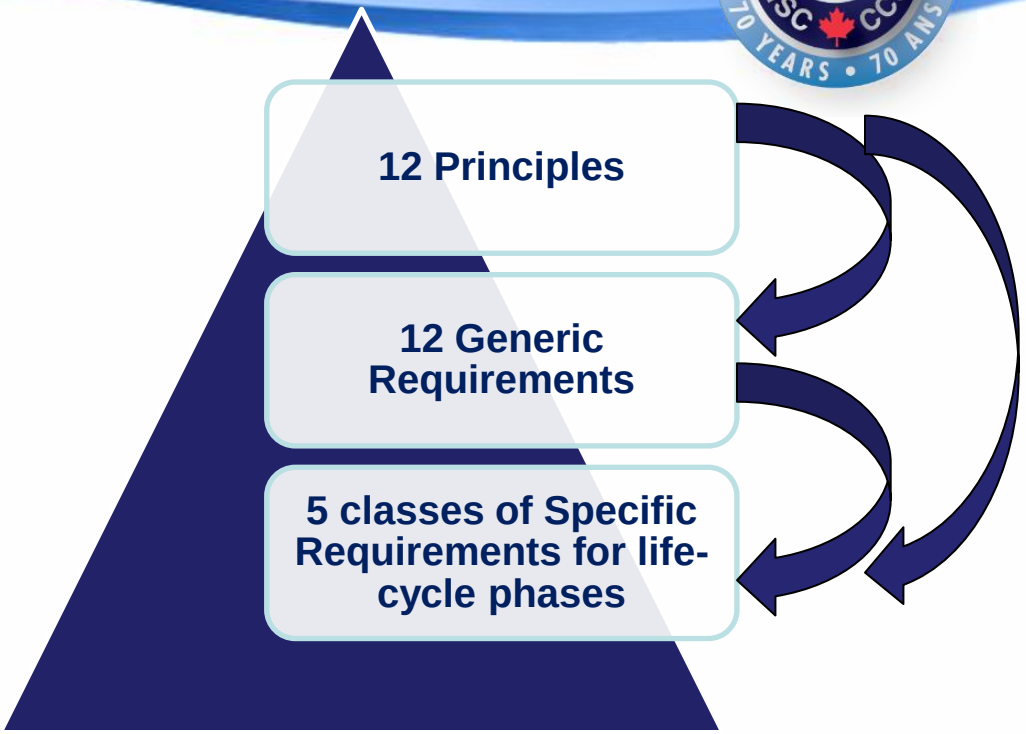
CSA N286 Structure:

The Principles apply to all of the requirements in the standard

The Generic requirements apply to all the specific life cycle phase requirements

Life-cycle phases:

- Supply Chain
- Design
- Construction
- Commissioning
- Operations
- Decommissioning



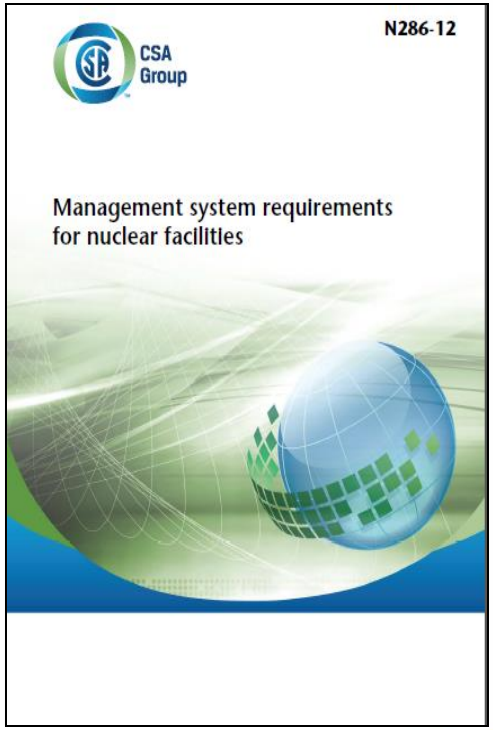
Specific requirements for:

1. Uranium Mines and Mills facilities
2. Uranium processing and fuel manufacturing facilities
3. High energy reactor facilities
4. Research and Isotope processing facilities
5. Radioactive Waste management facilities

CSA N286-12 "Management System Requirements for Nuclear Facilities"

1.3
This Standard applies to the life cycle of the nuclear facility from the initial conception through completion of decommissioning.

1.4
This Standard also applies to supplier(s) contracted to perform the life-cycle activities of design, supply chain, construction, commissioning, operation, and decommissioning of the nuclear facility; however, the top management of the nuclear facility remains accountable to ensure the requirements of this Standard are met.



CSA N286-12 "Management System Requirements for Nuclear Facilities"

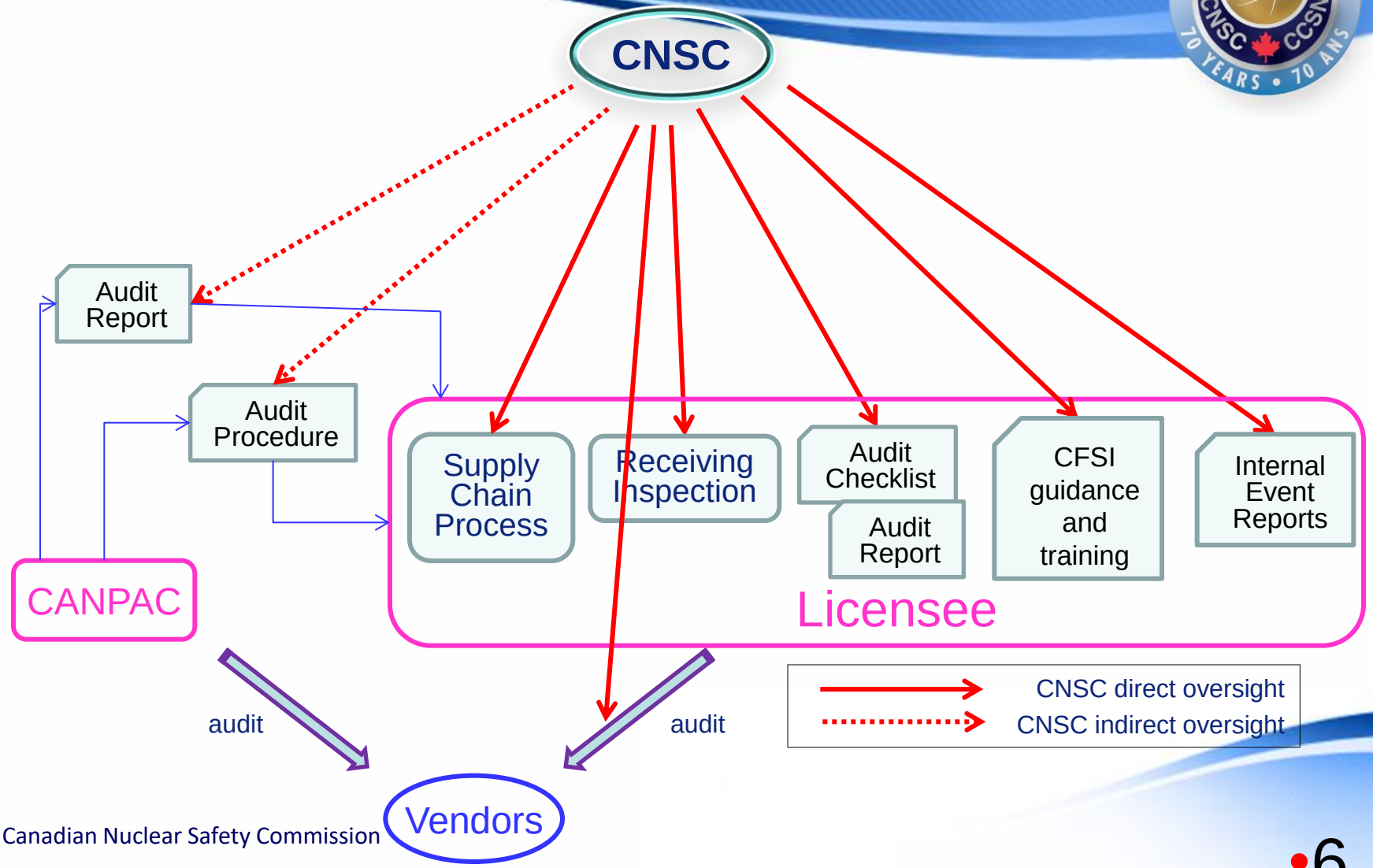
7 Specific requirements for high energy reactor facilities

7.1 Application
7.2 Site selection
7.3 Design
7.4 Safety analysis
7.5 Configuration management
7.6 Supply chain
7.7 Construction
7.8 Commissioning
7.9 Operating
7.10 Decommissioning
7.11 Common requirements

7.6 Supply chain

7.6.1 General
7.6.2 Purchasing requirements
7.6.3 Supplier acceptability
7.6.4 Provision of the purchasing requirements to suppliers
7.6.5 Supplier selection and award
7.6.6 Supplier-customer relationship
7.6.7 Verification of services
7.6.8 Receipt and inspection of items
7.6.9 Segregation and disposition of problem items
7.6.10 Storage and handling
7.6.11 Planning for replacement parts

CNSC Oversight of the Nuclear Supply Chain



Relevant Regulatory Documents and Standards

- CSA N286-12 “Management system requirements for nuclear facilities
  - Provides the fundamental verification criteria for supply chain
- CSA N299-16 “Quality assurance program requirements for the supply of items and services for nuclear power plants, Category 1 to 4”
  - Updated z299 series now addresses CFSI for suppliers and sub suppliers. Used by industry to implement requirements in CSA N286-12 . Applies to the control of the use of software employed in the operation of process, production, inspection, and test equipment.
    Endorsed by CNSC in REGDOC 2.1.1 “Management Systems”
- CSA N286.7-16 “Quality assurance of analytical, scientific and design computer programs”.
- CSA N290.7-14 “Cyber security for nuclear power plants and small reactor facilities”.
  - Interface with supply chain as well as management controls for system and services acquisition

Relevant Regulatory Documents and Standards

- REGDOC-3.1.1 *(Reporting Requirements for Nuclear Power Plants)*
  - Addition of CFSI as reportable came into effect in January 2015. CNSC staff review reportable events for supply management issues

- REGDOC-2.1.1 (*Management Systems*)
  - Draft ready for public review. Provides clarification on existing management system requirements applicable to CFSI and Contractor Management. Endorses CSA N299 and makes reference to IAEA TECDOC-1169, *Managing Suspect and Counterfeit Items in the Nuclear Industry* and the Electric Power Research Institute (EPRI) report 1019163, *Counterfeit and Fraudulent Items - Mitigating the Increasing Risk*,

- RD/GD-369 *(Licence Application Guide: Licence to Construct a Nuclear Power Plant)*
  - The applicant and the regulatory body will have right of access to the premises of any suppliers to the construction program

CNSC Regulatory Activities

- CNSC staff review and inspect licensees' supply chain processes, including supplier auditing as well as qualification processes done by third party auditors (i.e., CANPAC and NUPIC)
- CNSC staff monitor the licensees' internal and reportable events for supply management issues related to items and services.
- Remain an active member of MDEP-VICWG as well as observer at CANPAC and NUPIC meetings
- Continue to update and develop industry standards and guidance (CSA N standards and CNSC REGDOCs)

CNSC Regulatory Activities

- CNSC staff expect licensees to have effective processes for the management of contractors and retain responsibility for safety

- CNSC staff perform oversight of licensee's contractor management activities through the following routine compliance activities:
  - Desktop Reviews (Technical assessments) of Program and Process documents
  - Compliance Inspections
  - Reviews of events and trending activities
  - Review and oversight of inspections/audits done by the licensees for their contractors.

- CNSC staff indirectly assess contractors' processes and practices

- CNSC staff pay special attention to the work performed by the Engineering, Procurement and Construction (EPC) contractors

Looking Forward

- Update or add to CSA N299 to address Commercial Grade Dedication processes
- Complete the CSA N286 commentary (CSA N286.0.1-14) for generic and specific management system requirements
- Consolidate criteria for “Reverse Engineering” and the associated QA implications
- Maintain an awareness of supply chain developments impacting quality (ie Counterfeit, Fraudulent and Suspect items) through domestic and international activities
- Share operating experience with regulators internationally

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