



Document: ISO/TC 85/SC 5/WG 8/ISO-1709:2018 Summary

Nuclear energy — Fissile materials — Principles of criticality safety in storing, handling and processing

This document provides a summary of the following:

ISO-1709:2018. (Third Edition). *Nuclear energy — Fissile materials — Principles of criticality safety in storing, handling and processing.*

Énergie nucléaire — Matières fissiles — Principes de sûreté-criticité lors des opérations d'entreposage, de manutention et de mise en œuvre du procédé

ISO-1709:2018.Amd 1 :2022 (First edition) *Methods of control and safety equipment*

Méthodes de contrôle et équipements importants pour la sûreté

What is this standard?

This document specifies the basic principles and limitations which govern operations with fissile materials. It discusses general nuclear criticality safety criteria for equipment design and for the development of operating controls, while providing guidance for the assessment of procedures, equipment, and operations. It does not cover specific quality assurance (management system) requirements or details of equipment or operational procedures.

ISO-1709 is the fundamental standard for the assessment of nuclear criticality safety (NCS). It sets out the basic principles of how NCS should be achieved for areas where there is a potential for a nuclear criticality accident.

What does it cover?

It sets out the broad principles in order to achieve NCS as well as providing information on aspects of NCS that affect it. Specifically it covers:

- Procedures (responsibilities, equipment design, assessment, procedures)
- Factors affecting criticality
- Basis of assessment
- Margin of criticality safety
- Demonstration of criticality safety
- Equipment control
- Material control
- Dispatch and receipt of material
- Monitoring of procedures
- Need for an emergency plan and criticality alarm

These topics set out the key principles and on occasion are developed further in other NCS ISO standards.

Why Is It Useful?

It is important to achieve an acceptable level of NCS. ISO-1709 is the international consensus standard that sets out the minimum requirements to achieve NCS for operations involving the processing, transport and storage of fissile materials. This standard is hence a useful document to achieving those requirements.

Who should use it?

An individual or body who has responsibility in the design or maintenance of NCS for any process or facility. These individuals would typically be NCS specialists with the responsibilities of assessment, peer review or authorisation of NCS documentation. Also, Individuals or bodies with responsibilities of oversight and regulation of facilities and processes that involve the provision of NCS.

Where can I find out more?

The ISO-1709 and ISO-1709:Amd 1 standards webpage can be found at the ISO website:

<https://www.iso.org/standard/68617.html> and <https://www.iso.org/standard/81439.html>