



Document: ISO/TC 85/SC 5/WG 8/ISO-27467:2009 Summary

## ***Nuclear criticality safety — Analysis of a postulated criticality accident***

This document provides a summary of the following:

**ISO-27467:2009 (First Edition) Nuclear criticality safety — Analysis of a postulated criticality accident**  
*Sûreté-criticité — Analyse d'un hypothétique accident de criticité*

### **What is this standard?**

This international standard specifies areas that are important to study when analyzing potential criticality accidents. Such analyses are performed in facilities where a criticality accident cannot be reasonably ruled out. It specifies the objectives of a criticality accident analysis and details the main components of such an analysis. It also sets out the steps and activities that support the development of a criticality emergency response plan.

### **What does it cover?**

The standard covers requirements, recommendations and guidance for a criticality accident analysis. Specifically, it covers:

- The determination of the credible accident scenario(s)
- The estimation of the power history and the energy release, using calculation codes or simplified models
- The estimation of potential individual exposure and radiological impact of radionuclide releases on the workers, the general public and the environment

In addition, an annex provides a flow diagram of a criticality accident analysis.

### **Why is it useful?**

Nuclear Criticality Safety (NCS) programmes at facilities are primarily directed at avoiding nuclear criticality accidents. However, the possibility of criticality accidents exists and the consequences can be life-threatening. For this reason, an analysis based on postulated accident scenarios, where a criticality accident is still credible, is useful to understand the expected consequences and provide for the appropriate provisions (such as means of detection and alarm), and protective actions to be included in a criticality emergency response plan.

ISO-27467 presents the concerns needed to be addressed to support an analysis of postulated criticality accidents.

### **Who should use it?**

An individual or body who has responsibility in the design or maintenance of NCS for any process or facility where a criticality accident cannot be reasonably ruled out. 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 a criticality emergency plan may be required.

### **Where can I find out more?**

The ISO-27467 standard webpage can be found at the ISO website:

<https://www.iso.org/standard/44172.html>