

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Nuclear power plants - Instrumentation systems important to safety -
Characteristics and test methods of nuclear reactor reactivity meters**

**Centrales nucléaires - Systèmes d'instrumentation importants pour la sûreté -
Caractéristiques et méthodes d'essai des réactimètres d'un réacteur nucléaire**

IEC 63374:2025

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

Nuclear power plants - Instrumentation systems important to safety - Characteristics and test methods of nuclear reactor reactivity meters

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The text of this International Standard is based on the following documents:

Draft	Report on voting
45A/1611/FDIS	45A/1621/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

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INTRODUCTION

a) Technical background, main issues and organization of the document

This document focuses on characteristics and test methods of nuclear reactor reactivity meters. Reactivity is the fundamental parameter that instantaneously characterizes the evolution of the power of a reactor. The measurement of reactivity in a nuclear power plant is used to indicate the deviation of the effective neutron multiplication factor from unity. A reactivity meter directly calculates the reactivity from a measurement of neutron flux of the reactor by solving the kinetic equations of the point reactor model. It is intended that this document be used by operators of nuclear power plants (NPPs), systems evaluators and licensors.

b) Situation of this document in the structure of the IEC SC 45A standard series

IEC 63374 is a third level IEC/SC 45A document. For more details on the structure of the IEC SC 45A standard series, see item d) of this Introduction.

c) Recommendations and limitations regarding the application of this document

To ensure that this document will continue to be relevant in future years, the emphasis has been placed on issues of principle, rather than specific technologies.

d) Description of the structure of the IEC SC 45A standard series and relationships with other IEC documents and other bodies' documents (IAEA, ISO)

The IEC SC 45A standard series comprises a consistent set of documents organised in a hierarchy of four levels. The top-level documents of the IEC SC 45A standard series are IEC 61513 and IEC 63046, covering respectively general requirements for instrumentation and control (I&C) systems and general requirements for electrical power systems of NPPs. IEC 61513 and IEC 63046 adopt an overall system life-cycle framework and constitute, along with the relevant second-level standards, the nuclear implementation of the basic safety series IEC 61508.

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