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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 13627-2021

Replacing GB/T 13627-2010

**Criteria for accident monitoring instrumentation for nuclear
power plants**

核电厂事故监测仪表准则

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Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents" drafted: This document replaces GB/T 13627-2010 "Guidelines for Accident Monitoring Instruments in Nuclear Power Plants": Compared with GB/T 13627-2010, except for the structure In addition to adjustments and editorial changes, the main technical changes are as follows:

- Modified the description about the scope (see Chapter 1, Chapter 1 of the:2010 edition);
- Modified normative references (see Chapter 2, Chapter 2 of the:2010 edition);
- Added the terms "accident manager", "design basis accident", "design extension condition", "safe shutdown", "safety function", "safety system" "serious accident" (see 3:2, 3:8, 3:9, 3:13, 3:14, 3:15, 3:16);
- Delete the terms "accidental operation", "important safety function", "current value", "display unit", "response time", "safety-related function", "check "Measurement unit" and its definition (see 3:6, 3:7, 3:8, 3:11, 3:14, 3:15, 3:16 of the:2010 edition);
- Modified the terms "Accident Analysis License Benchmark", "Accuracy", "Auxiliary Support Facility", "Design Basis Event", "Permit Benchmark Document" Definition of (see 3:1, 3:3, 3:5, 3:7, 3:11, 3:1, 3:2, 3:4, 3:9, 3:12 of the:2010 edition);
- Added design criteria for monitoring variables for severe accidents (see 4:7, 4:8, 5:1, 5:4, 6:3, 7:2, 8:2, 8:7, Chapter 9);
- Updated the example of monitoring channel display type (see Figure 2, Figure 2 of the:2010 edition): Please note that some content of this document may be patented: The issuing agency of this document assumes no responsibility for identifying patents: This document is proposed and managed by the National Standardization Technical Committee of Nuclear Instrumentation (SAC/TC30): This document is drafted by: China Nuclear Power Engineering Co., Ltd: The main drafters of this document: Shang Xuelian, Yu Lei, Fan Sui, Guo Lin, Gu Yanchun, Chen Rigang, Wang Yanjun, Feng Jia, Ma Yiwei: The previous versions of this document and its superseded documents are as follows:

---GB/T 13627:1-1992 first released in:1992;

---GB/T 13627:2-1992 first released in:1992;

---The first revision in:2010 was integrated into GB/T 13627-2010;

---This is the second revision: Guidelines for Accident Monitoring Instruments in Nuclear Power Plants

1 Scope

GB/T 13627-2021 is the Chinese national standard on criteria for accident monitoring instrumentation for nuclear power plants, in the field of energy and heat transfer engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 31 December 2021 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 July 2022. Classification: ICS 27.120.20, CCS F82. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the selection of monitoring variables for NPPs for expected operational events, design basis accidents and severe accidents and the monitoring of accidents: Guidelines for the design, performance, qualification and display of measuring instruments, as well as guidance on the use of portable instruments: This document is applicable to the design of new nuclear power plants and the design and modification of in-service nuclear power plants: This document applies to all Function and design of accident monitoring instruments used:

--- planned operations for accident mitigation as required;

--- Assess power plant operating conditions and safety system performance, and make decisions for the power plant to respond to abnormal events;

--- Accidents to achieve and maintain safe shutdown operations: This document does not apply to the following situations:

--- Incident monitoring instruments for historical recording or maintenance purposes only;

--- other instruments that may be used in accident conditions;

--- Other design extended working condition monitoring instruments that do not belong to serious accidents:

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document:

GB/T 7163 Reliability Analysis Requirements for Nuclear Power Plant Safety Systems

GB/T 9225 General principles for reliability analysis of safety systems in nuclear power plants

GB/T 12727 Appraisal of safety-grade electrical equipment for nuclear power plants

GB/T 12788 Nuclear Power Plant Safety Level Power System Guidelines GB/T 13284:

3 Terms and Definitions

The following terms and definitions apply to this document: 3:1

accidentanalysislicensingbasis Part of a license application document describing the thermal-hydraulic response of a nuclear power plant to anticipated operational events and design basis accidents, and