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

GB/T 15473-2025

Replacing GB/T 15473-2011

**Qualification of class 1E static battery chargers, inverters, and
uninterruptible power supply systems for nuclear power plants**

核电厂安全级静止式蓄电池充电器、逆变器和不间断电源系统的鉴定

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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 for standardization documents" Drafting. This document replaces GB/T 15473-2011 "Quality Appraisal of Safety-Grade Static Charging Devices and Inverter Devices for Nuclear Power Plants" and Compared with GB/T 15473-2011, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) The definition of the term "inverter" has been changed (see 3.3, 3.6 of the.2011 edition), and the terms "uninterruptible power supply system" and "mitigation circuit" have been added. "Environment" and "surge suppressor" and their definitions (see 3.8, 3.9, 3.10);
- b) Added the content of software analysis (see 5.2.3.2);
- c) The aging requirements for docking plugs have been changed (see 5.3.3.5, 5.3.3.3.5 of the.2011 edition);
- d) Added the content of transient voltage test (see 5.4.2.6). Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document is proposed and coordinated by the National Technical Committee for Standardization of Nuclear Instruments (SAC/TC30). This document was drafted by: Shanghai Nuclear Engineering Research and Design Institute Co., Ltd., Nuclear and Radiation Safety Center of the Ministry of Ecology and Environment, Kehua Data Limited by Share Ltd. The main drafters of this document are. Sun Hao, Cai Weichong, Huang Dongyan, Ni Dan, Lu Yanyun, Duanmu Yuxiang, Wei Yuning, Wang Sicong, Liu Xin, Jiang Songfang, Li Shixin, Du Wei, Zhou Ziyu, Ming Hao, and Kang Xinyue. The previous versions of this document and the

documents it replaces are as follows:

--- First published as GB/T 15473-1995 in 1995 and first revised in 2011;

--- This is the second revision. Safety-grade stationary battery chargers for nuclear power plants, Qualification of inverters and uninterruptible power supply systems

1 Scope

GB/T 15473-2025 is the Chinese national standard on qualification of class 1e static battery chargers, inverters, and uninterruptible power supply systems 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 1 August 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 February 2026. Classification: ICS 27.120.20, CCS F 83. 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 safety-rated stationary battery chargers, inverters, and uninterruptible power supplies for installation in the mild environment of nuclear power plants. Technical specifications, identification and documentation requirements for UPS systems. This document applies to safety-rated stationary battery chargers, inverters, and uninterruptible power supplies installed in the mild environment of nuclear power plants. Identification of UPS systems and associated auxiliary equipment.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 12727-2023 Identification of electrical equipment important to safety in nuclear power plants

GB/T 13286 Criteria for the independence of safety-related electrical equipment and circuits in nuclear power plants

GB/T 13625 Seismic evaluation of safety-grade electrical equipment in nuclear power plants

GB/T 13629 Applicable criteria for programmable digital equipment in safety systems of

nuclear power plants NB/T 20420 Identification of safety-grade cables and connectors for nuclear power plants

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Burn-in A reliability testing method that screens out early failures by pre-operating equipment or components.

3.2 battery chargerbattery charger Converts AC power into DC power, charges the battery and keeps it fully charged, and provides power to DC loads during normal operation. equipment.

3.3 Inverter A device that converts direct current into alternating current. NOTE. This includes auxiliary equipment such as transfer switches, AC power transformers and regulators, input rectifiers (other than battery chargers) and isolation devices. (such as isolation diodes).

3.4 stress analysis An electrical and thermodynamic design analysis of a component for use in a specific circuit and within a specific range of operating conditions. NOTE. Mechanical cycle evaluations are performed on applicable components to determine the effect on component life.