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

GB/T 13869-2017

Replacing GB/T 13869-2008

General guide for safety of electric user

用电安全导则

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Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009. This Standard replaces GB/T 13869-2008 "General guide for safety of electric user". Compared with GB/T 13869-2008, the main technical changes in this Standard are as follows: - deleted management requirements for safety of electric user from the scope, adjusted the application scope of the standard; - deleted the normative references, listed the informative references into the bibliography; - in the terms and definitions, modified electric shock (see

2.3 of this Edition,

3.3 of Edition 2008), direct contact (see

2.4 of this Edition,

3.4 of Edition 2008), indirect contact (see

2.5 of this Edition,

3.5 of Edition 2008), protective earthing (see

2.6 of this Edition,

3.6 of Edition 2008), added class 0 earthing (see

2.7 of this Edition); - modified the requirements for electric product design (see Clause 3 of this Edition, Clause 4,

5.4 of Edition 2008); - modified the use of electric product (see

5.2.1 of this Edition, 5.5,

5.6 of Edition 2008); - deleted the requirements for equal potential connections, working neutrals, lamp holders, communication lines and power lines in Edition 2008 (see 6.10, 6.12, 6.17,

6.18 of Edition 2008); - added the requirements for overhaul and safety performance testing before the electricity product is reused (see Clause 6 of this Edition); - added the general rules for special environmental conditions (see Clause 7 of this Edition); - deleted the management requirements for electric product (see Clause 10 of Edition 2008). This Standard was proposed by and shall be under the jurisdiction of National Technical Committee on Electric Safety of Standardization Administration of China (SAC/TC 25). The drafting organizations of this Standard. Machinery Industry Beijing Institute of Electrotechnics and Economics, Suzhou Electric Apparatus Research General guide for safety of electric user

1 Scope

GB/T 13869-2017 is the Chinese national standard on general guide for safety of electric user, in the field of electrical 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 29 December 2017 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 July 2018. Classification: ICS 29.020, CCS K09. 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 Standard specifies the basic requirements for the use of electrical safety at all stages of the entire life cycle of the design, manufacture, installation, use, and maintenance of electrical equipment, the general principles of electrical safety under special conditions and environmental conditions, and the specific requirements for personnel. This Standard applies to all types of electrical equipment and electrical devices with rated voltages up to and including 1000V AC and up to 1500V DC.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1 electrical equipment products or components suitable for electrical energy applications by function and structure, including products for generation, transmission, distribution, storage, measurement, control, regulation, conversion, supervision, protection and

consumption of electrical energy, including electrical equipment, electrical installations and electrical appliances in the field of communications technology and their combination

2.2 electrical installation a combination of electrical equipment that achieves a specific purpose and has coordinated characteristics [

IEC 60050-826:2004, definition 826-10-01]

2.3 electric shock physiological effects of current flow through human or animal body [

GB/T 4776-2017, definition 2.1.3]

2.4 direct contact human or animal electrical contact with live parts [

GB/T 4776-2017, definition 2.1.16] may occur when using and the preventive measures that should be taken. After the power product is overhauled, it shall be reconfirmed before re-use. Electricity products shall be used within the specified service life. If it exceeds the service life, it shall be scrapped or replaced in time. If necessary, extend the service life in accordance with the relevant regulations. During any operation of any electricity product, it shall have necessary monitoring or monitoring measures. Electricity products are not allowed to operate at overload. When the electricity product stops operating due to a power failure or failure, etc., the power should be cut off in time. Check the cause, troubleshoot, and confirm that it has returned to normal before reconnecting the power supply. When in normal operation, it shall produce sparks OR keep electricity products with high temperature on the surface of the housing away from combustible materials when using OR take corresponding measures such as sealing and isolation. After use, cut off the power in time.

5.2.2 Special requirements for various products For mobile products for electricity use, a complete copper core rubber sheathed flexible cable or sheathed cord shall be used as the power cord. When moving, it shall prevent the power cord from being broken or damaged. The electricity product of fixed use shall be moved in the de-energized state and prevent any damage that reduces its safety performance. Class 0 equipment can only be used in non-conductive venues. Class 0 equipment cannot be used in other places. When using Class I equipment, it shall confirm that the metal shell or frame has been reliably grounded, or has been reliably connected to the protective earth with good grounding effect in the plug and socket, and appropriate electric shock protection devices shall be installed according to environmental conditions. The self-produced power generation device shall have measures to ensure isolation from the power supply network and meet the normal use requirements of the power product, and shall not be incorporated into the power grid without permission. Weather-proof, anti-fog and dust-proof measures shall be adopted for electricity products used outdoors.

6 Maintenance of electricity products

Maintenance of electricity products shall be performed in accordance with the

7.2 General rules for special environmental conditions China has a vast area and shall consider the special environmental conditions of electrical equipment and electrical installations, including tropical, cold, plateau, industrial corrosion, mines, and ships. For various types of products used under different special environmental conditions, the type of protection for the power product may be determined by taking into account the applicable environmental parameters and severity levels, depending on the characteristics of the product and the environment in which it is used. Electrical products used under special environmental conditions can be ensured by measures such as improving design parameters, good insulation performance, meeting special requirements for various environmental conditions, maintaining normal operation, etc. In addition, outdoor power products under dry heat, dry heat desert, and other special environmental conditions in a tropical environment shall meet certain enclosure protection levels and be able to work properly under high temperature, low temperature, or solar radiation.

8 Electricity electromagnetic compatibility (EMC)

Within the entire area of power usage, the allowable value of the radio interference characteristics shall be determined on the same frequency, so that the interference suppression can be kept at an economically reasonable level, and the entire frequency band can still achieve sufficient radio protection. Changes in the voltage of the power system and the limits of the immunity of harmonics shall comply with the requirements of product standards. The radiation disturbance of the power system during operation shall meet the requirements of the product standard. The immunity test and launch test of various electrical products can be tested according to the applicable methods specified in GB 4824-2013, GB 4343.1- 2009 or product standards.