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

GB/T 15166.6-2023

Replacing GB/T 15166.6-2008

**High-voltage alternating-current fuses - Part 6: Application
guide for the selection of fuse-links of high-voltage fuses for
transformer circuit applications**

高压交流熔断器 第6部分：用于变压器回路的高压熔断器的熔断件选用导则

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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 for Standardization Documents" drafting. This document is Part 6 of GB/T 15166 "High Voltage AC Fuses": GB/T 15166 has published the following parts:

- Part 1: Terminology;
 - Part 2: Current-limiting fuses;
 - Part 3: Spray fuses;
 - Part 4: Fuses for external protection of shunt capacitors;
 - Part 5: Guidelines for the selection of fuses for high-voltage fuses used in motor circuits;
 - Part 6: Guidelines for the selection of fuses for high-voltage fuses for transformer circuits:
- This document replaces GB/T 15166:6-2008 "High Voltage AC Fuses Part 6: Specifications for High Voltage Fuses Used in Transformer Circuits" Compared with GB/T 15166:6-2008, except for structural adjustment and editorial changes, the main technical changes in "Guidelines for Selection of Fuse Links" are as follows:

- Added fuse types suitable for transformer circuits (see Chapter 1);
- Added guidelines for the selection of fuses for jet fuses used in transformer circuits (see Chapter 5);
- Increased selection guidelines for the combination of current-limiting fuses and spray fuses for transformer circuits (see Chapter 6): Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents: This document is proposed by China Electrical

Equipment Industry Association: This document is under the jurisdiction of the National Fuse Standardization Technical Committee (SAC/TC340): This document is drafted by: Xi'an High Voltage Apparatus Research Institute Co., Ltd., Cooper Electronic Technology (Shanghai) Co., Ltd., Shanghai Nanhualan Ling Electric Co., Ltd., Schneider Electric (China) Co., Ltd., Risheng Group Co., Ltd., State Grid Liaoning Electric Power Co., Ltd: Power Science Research Institute, State Grid Hebei Electric Power Co., Ltd: Electric Power Research Institute, State Grid Zhejiang Electric Power Co., Ltd: Electric Power Research Institute, Ningbo Shun Li High Voltage Switch Technology Co., Ltd., Shandong Taikai Intelligent Power Distribution Co., Ltd., Zhejiang Bada Electronic Instrument Co., Ltd: Shitong Electric Branch, Jiangdong Fitting Equipment Co., Ltd., Shanghai Electric Power Transmission and Distribution Test Center Co., Ltd., Xi'an Jiaotong University, China Electric Power Research Institute Co., Ltd: Company, Eaton Electric Co., Ltd., Hongguang Electric Group Co., Ltd., Jiaxing Zhuoda Electric Technology Co., Ltd., Chint Electric Co., Ltd: Division, Zhejiang Minyuan High Voltage Electric Co., Ltd: The main drafters of this document: Xing Na, Tian Enwen, Sun Ming, Tan Yan, Lei Xiaoqiang, Gu Lili, Wang Feiming, Xie Ruitao, Pang Xianhai, Xie Cheng, Hu Guangfu, Ren Xiaodong, Ye Shuxin, Li Xiaodong, Le Sanxiang, Qiu Weifeng, Jiang Ziyuan, Liu Zhiyuan, Feng Ying, Kong Xiangjun, Chen Hongfei, Shi Hongwei, Fan Guangwei, Chen Weiwei, Shen Longjie, Cui Xudong, Dai Haoze, Zhao Qingbin: The release status of previous versions of this document and the documents it replaces are as follows:

---First published as GB/T 15166:2-1994 in:1994;

--- In the first revision in:2008, it was separated from GB/T 15166:2-1994 and became GB/T 15166:6-2008;

--- This is the second revision:

High-voltage AC fuse products are widely used in power transmission and distribution systems with a nominal voltage of 3kV and above in my country, as well as in factories, mines, and small residents: In the area, and as a protection device for lines, motors, transformers, fuses and other equipment: In this regard, my country has established a support system for high-voltage traffic GB/T 15166 series national standard system for current fuse products: GB/T 15166 aims to establish the design of high-voltage AC fuses, Ratings, tests and selection criteria for special occasions are proposed to be composed of 8 parts:

1 Scope

GB/T 15166.6-2023 is the Chinese national standard on high-voltage alternating-current fuses - part 6: application guide for the selection of fuse-links of high-voltage fuses for transformer circuit applications, 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 17 March 2023 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 October 2023. Classification: ICS 29.120.50, CCS K 43. 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 gives the basic principles for the coordination of fuses and other components of high-voltage fuses used in transformer circuits, and according to its Pre-arc time-current characteristics and other ratings are guidelines for the selection of this type of fuse: This document applies to transformer circuits and complies with GB/T 15166:2-2008 and GB/T 15166:3-2023 for high-voltage AC fuses The fuse of the device: The fuses covered in this document are: current-limiting fuses, jet fuses and combinations thereof:

2 Normative references

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

GB/T 14808-2016 High-voltage AC contactors, contactor-based controllers and motor starters

GB/T 15166:2-2008 High voltage AC fuses Part 2: Current limiting fuses

GB/T 15166:3-2023 High Voltage AC Fuses Part 3: Spray Fuses

GB/T 16926-2009 High-voltage AC load switch-fuse combination

3 Terms and Definitions

This document does not have terms and definitions that need to be defined:

4 Abbreviations

The following abbreviations apply to this document:

5 Current limiting fuse

1 Basic principles Figure 1 shows a system that includes high voltage fuses (or fuse banks), transformers and possible supply side and load side protection devices: of typical transformer applications: First, select the transformer according to its specific working

conditions, so as to determine the value of the rated current of the transformer and the value of the allowable overload current (if applicable)), and extrapolate the value of the inrush current: Then select the high voltage fuse(s) to provide the best protection for the circuit: Refer to Figure 1 for the selection of fuses And consider the following factors:

a) The minimum pre-arc time-current characteristic of the primary side high-voltage fuse is located on the right side of point A that determines the inrush current characteristics of the transformer: for For practical purposes, the inrush current of the transformer can be about 12 times the rated current of the transformer and last for 0.1s: