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

GB/T 22577-2025

Replacing GB/T 22577-2008

**Class 1E cables for nuclear power generating stations - General
requirements**

核电站用1E级电缆 通用要求

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents". Drafting.

This document replaces GB/T 22577-2008 "General Requirements for Class 1E Cables for Nuclear Power Plants". Compared with GB/T 22577-2008, except for...

Aside from structural adjustments and editorial changes, the main technical changes are as follows.

- Three terms and their definitions have been deleted (see sections 3.5, 3.6, and 3.7 of the 2008 edition);
- Seven new terms and their definitions have been added (see sections 3.4, 3.6, 3.7, 3.8, 3.9, 3.14, and 3.15);
- Change "Level 1E Functional Verification Test" to "Level 1E Qualification Test" (see 4.3.1, 4.3.2, 4.3.3, Table 1, 5.2.1, 5.2.3, 5.3.2). (and Appendix B);
- The quality assessment category codes have been changed (see Appendix C, 4.1.2, 4.2.1, and 4.2.2 of the 2008 edition);
- Insulation and sheath material performance requirements have been added (see 4.1 and Appendix A);

- References to IEEE Std 101 and IEC 60544.2 have been removed (see 5.3.2.1 of the 2008 edition);
- The requirements for irradiation dose rate have been changed (see 4.3.2.1 and 4.3.2.3, and 5.3.2.1 and 5.3.2.3 in the 2008 edition);
- Added requirements for beta-ray irradiation testing (see 4.3.2.3);
- Added immersion test requirements after DBE (see 4.3.1, 4.3.2.6, Table 1 and 5.3.2.6);
- Added requirements for jet impact testing and design extended operating condition verification testing (see 4.3.2.10, 4.3.2.11 and Table 1);
- The requirements for the combustion test have been changed (see 4.3.2.7, 5.3.2.6 in the 2008 version).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Electrical Equipment Industry Association.

This document is under the jurisdiction of the National Technical Committee on Standardization of Wires and Cables (SAC/TC213).

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The release history of this document and the document it replaces is as follows.

- First published in 2008 as GB/T 22577-2008;
- This is the first revision.

1 Scope

This document specifies the categories, general requirements, equipment qualification rules, test methods, and required documents for Class 1E cables used in nuclear power plants. document.

This document applies to Class 1E cables used in nuclear power plants, including power cables, control cables, instrumentation (compensating) cables, coaxial cables, etc.

Class. For general requirements of other cables, refer to this document.

2 Normative references

GB/T 2406.2

GB/T 2406.3

GB/T 2900.10

GB/T 11026.1

GB/T 11026.2

GB/T 11026.4

GB/T 12706.2-2020

GB/T 12706.3-2020

GB/T 12727-2023

GB/T 17650.1

GB/T 17650.2

GB/T 18380.12-2022

GB/T 18380.33-2022

GB/T 18380.34-2022

GB/T 18380.35-2022

GB/T 18380.36-2022