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

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**Fire prevention measures on converters for high-voltage direct
current (HVDC) systems, static var compensators (SVC) and
flexible AC transmission systems(FACTS) and their valve halls**

高压直流系统、静止无功补偿装置和柔性交流输电系统用换流器及其阀厅的防火
措施

(English Translation)

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References

Foreword

Foreword

This document is a report-type guidance technical document.

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 is modified to adopt IEC TR62757:2015 "High Voltage Direct Current (HVDC) Systems, Static Var Compensators (SVCs) and Flexible AC Transmission Systems".

The document type "Fire Protection Measures for Converters and Valve Halls of Power Transmission Systems (FACTS)" has been changed from an IEC technical report to a Chinese standard.

Guiding technical documents.

Compared with IEC TR62757:2015, this document has undergone the following structural adjustments.

---3.3~3.4 correspond to 3.12~3.13 of IEC TR62757:2015;

--- 3.5~3.9 correspond to 3.15~3.19 of IEC TR62757:2015;

---3.10~3.16 correspond to 3.21~3.27 of IEC TR62757:2015;

---3.17, 3.18, 3.19, 3.20, 3.21~3.22, 3.23~3.25, 3.26~3.27, 3.28, 3.30 correspond to IEC TR62757.

---Move Chapter 4 of IEC TR62757:2015 to Appendix A, and shift the article numbers of subsequent chapters forward;

---Appendix B corresponds to Appendix A of IEC TR62757:2015.

This document differs significantly from IEC TR62757:2015. The differences are indicated in the margins of the relevant clauses.

The vertical single line (|) is marked. The specific technical differences and their reasons are as follows.

---The scope of the standard has been changed, clarifying the applicable objects and boundary conditions (see Chapter 1);

---Added normative reference documents (see Chapter 2);

---To align with my country's national conditions and avoid redundancy or ambiguity, the terms "automatic fire detector," "automatic fire extinguishing system," "combustion," and "starting fire" have been removed.

"Fire", "Charcoal", "Carbonization", "Combustion", "Exit", "Fire", "Fire Pump Connection", "Flame", "Ignition", "Evacuation Facilities", "Rapid Response Spraying" "Device", "Self-extinguishing", "Semiconductor device";

---To adapt to my country's power engineering and fire protection systems, the terms "automatic fire alarm system" and "valve hall" have been added (see 3.2 and 3.29);

---To maintain consistency with commonly used terminology in my country's power engineering and fire protection systems, the terms "fire alarm box," "alarm box," and "siren" have been changed.

Definition (see 3.6);

---Based on the domestic station layout and the risks of through-sealing, the description of the physical layout of the valve hall and related facilities has been revised, and valve hall sealing has been added.

The content (see 4.1.1);

---To align with domestic engineering terminology, "service space" has been changed to "related facilities" (see 4.1.2);

---To clarify the various construction forms, change the heading to "Firewalls or other fire barriers," and modify the technical content accordingly (see 4.1.3.2);

---Added fire protection requirements for oil-filled equipment passing through the valve hall area (see 4.2.2.3);

---In addition to the requirement of "low flame spread and low smoke emission level", the requirement of "materials with lower heat release rate should be given priority for finishing" is added.

(See 4.2.2.5);

---To facilitate comparison with domestic regulations, the phrase "expected occupation time of the valve hall" has been removed, and "evacuation facilities" has been changed to "evacuation routes".

Evacuation routes, staircases, exits, and other evacuation signs (see 4.3);

---Using national regulations as the compliance baseline, the phrase "evacuation facilities should comply with local regulations and operational requirements" has been changed to "must comply with national fire safety regulations".

The phrase "the only expected time for most valve chambers to be occupied is during maintenance" was removed (see 4.3).

---Based on operational and maintenance practices, "gate electronic devices or monitoring electronic devices" has been changed to "gate circuits/gate circuits and monitoring circuits";

Based on domestic realities, "voltage source capacitor or stage capacitor (if applicable)" will be changed to "voltage source converter DC capacitor (if applicable)".

(For use); To adapt to diverse valve tower structures, change "interlayer support insulator" to "support insulator/suspension insulator" (see 5.2.1);

---Add "Current Transformers" to the list of "Other Valve Hall Equipment," specifying that "these devices may include those that allow online monitoring of low air pressure." The phrase "electrical contacts" should be changed to "These devices generally contain electrical contacts that allow for online monitoring of low atmospheric pressure" (see 5.3).

---Based on practical applications of fire monitoring, the statement "air sampling systems can also effectively detect overheated joints or components" and the valve have been removed.

Description of equipment in the hall that does not require fire monitoring;

---To maintain consistency throughout the text, the phrase "fire detection solutions must be able to accurately and reliably detect fires in order to intervene in a timely manner and avoid false alarms" will be repeated.

The phrase "alarm" was changed to "fire detection solutions should accurately and reliably detect fires in order to intervene in a timely manner and avoid false alarms," and "most important" was changed to "fire detection solutions should accurately and reliably detect fires in order to intervene in a timely manner and avoid false alarms." The action of "stopping the power input to the equipment" should be changed to "the most important