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

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**Thyristor valves for thyristor controlled series
capacitors(TCSC) - Electrical testing
(English Translation)**

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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 equivalent to IEC 62823:2019 "Electrical testing of thyristor valves for thyristor controlled series capacitors (TCSC)".

The following minimal editorial changes were made to this document.

---Added formula number;

--- Add "Note 3" in 3.7 (see 3.7);

--- Add "Note" in 5.2.1 and 8.2 (see 5.2.1 and 8.2);

---Change the name of the insulation test between valve terminals and valve chamber and the insulation test between valve terminals from "AC test" to "AC voltage test" (See Table 2, 7.3.1, 8.3.1 and 8.3.2.1);

--- Correct the "maintain test voltage $U_{tv11min}$ " in the AC voltage insulation test procedure between valve terminals to "maintain test voltage $U_{tv1\ 15s}$ "(see 8.3.1.2);

--- Change the text symbol "SIPLV" of the valve arrester operating impulse protection level to "USIPLV" to conform to the writing rules of the quantity symbol.

Then (see 8.3.2.1).

1 Scope

This document specifies routine and type tests on thyristor valves for use in thyristor controlled series capacitor (TCSC) installations for AC transmission.

The tests specified in this document are for air-insulated valves operating in capacitive lift mode or bypass mode. For valves with other insulation types for valves operated in the inductive lift mode, the test requirements and acceptance criteria shall be determined by agreement between the purchaser and the seller.

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.

IEC 60060-1:2010 High-voltage test technology Part 1: General definitions and test requirements (High-voltage test tech-Note. GB/T 16927.1-2011 High voltage test technology Part 1: General definitions and test requirements (IEC 60060-1:2010, MOD) IEC 60071-1 Insulation coordination - Part 1: Definitions, principles and rules Definitions, principles and rules) Note. GB/T 311.1-2012 Insulation coordination Part 1: Definitions, principles and rules (IEC 60071-1:2006, MOD) IEC 60071-2 Insulation coordination-Part 2: Application

guide Note. GB/T 311.2-2013 Insulation coordination Part 2: Guidelines for use (IEC 60071-2:1996, MOD) urements Note. GB/T 7354-2018 High voltage test technology Partial discharge measurement (IEC 60270:2000, MOD)

3 Terms and definitions

The following terms and definitions apply to this document.

Thyristor valve

The electrical and mechanical combination of a thyristor stage, including all connections, auxiliary components and mechanical structure, capable of being installed with a thyristor controlled series capacitor the phase reactors are connected in series.

Valve section

An electrical combination of several thyristor stages and other components that scales to give the electrical performance of a complete valve.

Note: This term is mainly used to define the test sample during valve testing.

Thyristor level

The component of a thyristor valve, consisting of an anti-parallel thyristor pair and its directly connected auxiliary components and reactor (if any).