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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 14285-2023

Replacing GB/T 14285-2006

Technical code for relaying protection and security automatic equipment

继电保护和安全自动装置技术规程

Issued on: November 27, 2023 **Implemented on: March 1, 2024**

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Table of Contents

Foreword

This document complies with the regulations of GB/T 1:1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Custom drafting: This document replaces GB/T 14285-2006 "Technical Regulations for Relay Protection and Safety Automatic Devices" and is consistent with GB/T 14285-2006 In addition to structural adjustments and editorial changes, the main technical changes are as follows:

---Added terms, definitions and abbreviations (see Chapter 3);

---Added synchronous condenser protection (see 5:2:6);

---Added AC relay protection for 750kV and 1000kV voltage levels (see 5:3:9, 5:4:4);

---Added the protection of flexible transmission equipment and added special requirements for the protection of lines containing flexible transmission equipment and its adjacent lines (see 5:7:4, 5:8:2:4, 5:8:5, 5:8:6, 5:4:6);

---Added series reactor protection (see 5:9);

---Added flexible DC transmission protection and UHV DC transmission protection (see 6:2, 6:3, 6:4, 6:5);

---Added distribution network protection, microgrid protection, photovoltaic power station protection, wind farm protection, and electrochemical energy storage power station protection (see 5:10);

---Added low-frequency oscillation monitoring and control device (system) (see 7:2:2), subsynchronous oscillation monitoring and control device (system) (see 7:2:3);

---Added power quick switching device (see 7:4:3) and automatic quasi-synchronization device (see 7:6);

--- Added basic principle requirements for relay protection and safety automatic device hardware and software (see 8:2, 8:10);

---Added basic principle requirements for auxiliary devices and auxiliary relays (see 8:3);

--- Added requirements for the installation methods and screens (cabinets) of relay protection and safety automatic devices (see 8:4);

---Added online monitoring and analysis requirements for relay protection and safety automatic devices (see Chapter 9);

1 Scope

GB/T 14285-2023 is the Chinese national standard on technical code for relaying protection and security automatic equipment, 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 27 November 2023 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 March 2024. Classification: ICS 29.240.99, CCS K45. 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 specifies the overall requirements for power system relay protection and safety automatic devices, AC relay protection, and DC transmission system protection: protection, safety automatic devices and related circuits and equipment requirements, etc: This document is applicable to relay protection and safety automation in power systems with voltage levels of AC 3kV and above and DC ±100kV and above: R&D, design, manufacturing, testing, installation, debugging, operation, maintenance, overhaul, management, etc: of moving equipment:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document: GB/T 2900:

17 Electrical terminology measuring relay

GB/T 2900:49-2004 Electrical terminology power system protection GB/T 2900:

50 Electrical Terminology General Terminology for Power Generation, Transmission and Distribution GB/T 7409:

1 Definition of synchronous motor excitation system GB/T 7409:

2 Synchronous motor excitation system Part 2: Model for power system research GB/T 7409:

3 Synchronous motor excitation system Technical requirements for large and medium-sized synchronous generator excitation systems GB/T 14598:

24 Measuring relays and protective devices Part 24: Power system transient data exchange (COMTRADE) communication Use format GB/T 14598:

26 Measuring relays and protective devices Part 26: Electromagnetic compatibility requirements GB/T 20840:

2 Transformers Part 2: Supplementary technical requirements for current transformers GB/T 20840:

3 Transformers Part 3: Supplementary technical requirements for electromagnetic voltage transformers GB/T 20840:

5 Transformers Part 5: Supplementary technical requirements for capacitive voltage transformers GB/T 20840:

7 Transformers Part 7: Electronic voltage transformers GB/T 20840:

8 Transformers Part 8: Electronic current transformers GB/T 22390:

5 High-voltage DC transmission system control and protection equipment Part 5: DC line fault locating device GB/T 22390:

6 High voltage direct current transmission system control and protection equipment Part 6: Transient fault recording device for converter stations