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

GB/T 15148-2024

Replacing GB/T 15148-2008

Technical specifications for power load management system

电力负荷管理系统技术规范

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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 replaces GB/T 15148-2008 "Technical Specification for Power Load Management System": In addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) The content of "Scope" has been changed (see Chapter 1, Chapter 1 of the:2008 edition);
- b) Added the terms and definitions "power load" (see 3:1), "smart energy unit" (see 3:4), "measurement and control unit" (see 3:5), "load Resources" (see 3:6), "Adjustable load" (see 3:7), "Interruptible load" (see 3:8), "Flexible regulation" (see 3:9), "Baseline load load" (see 3:10), "load aggregator" (see 3:11), "virtual power plant" (see 3:12); changed the terminology and definition "power load management" The content of "load management system" has been changed (see 3:2, 3:1 of the:2008 edition); the term name of the term "load management device" has been changed and content description (see 3:3, 3:2 of the:2008 edition);
- c) The overall structure of the power load management system has been changed (see 5:1, 4:3:1 of the:2008 edition);
- d) The requirements for the master station hardware equipment and master station software equipment have been changed (see 5:2, 4:3:2 and 4:3:3 of the:2008 edition);
- e) Added the description of "data transmission channel" and "load management device"

(see 5:3 and 5:4);

f) Changed the arrangement and content of the load management master station, and sorted out the function configuration of the master station (see 6:1,:2008 edition): 4:4:1), from load resource management, load regulation control, load trading services, user interactive services and operation and maintenance management to the main station The functions are subdivided and described (see 6:2, 4:4:2 of the:2008 edition);

g) Changed the master station reliability index (see 6:3:1, 4:5:1 of the:2008 edition) and real-time index (see 6:3:2, 4:5:2), capacity and processing capability indicators (see 6:3:3, 4:5:3 of the:2008 edition), communication channel indicators (see 6:3:4,:2008 edition 4:5:4);

h) Changed the requirements for data transmission channels (see Chapter 7, 4:3:6 of the:2008 edition);

i) Deleted "Operation status of dedicated relay station" (see 4:4:2:7:5 c of the:2008 edition) and "Reactive power compensation control" (see 4:4:2:2:7);

j) The function of the load management device has been changed (see Chapter 8, 4:4:3 of the:2008 edition); "Load management device function configuration" has been added Content list (see 8:1), the load management device functions are divided into resource management, regulation control, transaction support, interactive services and operation and maintenance Management of five categories (see 8:2); Added "main performance indicators" of load management devices (see 8:3);

k) Changed the master station safety requirements (see 9:1, 4:3:5 of the:2008 edition);

l) Added testing content (see Chapter 10): Please note that some of the contents of this document may involve patents: The issuing organization of this document does not assume the responsibility for identifying patents: This document was proposed by the China Electricity Council: This document is under the jurisdiction of the National Power System Management and Information Exchange Standardization Technical Committee (SAC/TC82): This document was drafted by: State Grid Electric Power Research Institute Co., Ltd., State Grid Corporation of China, State Grid Anhui Electric Power Co., Ltd., State Grid Shanxi Electric Power Company, State Grid Shanghai Electric Power Company, State Grid Jiangsu Electric Power Company, State Grid Zhejiang Electric Power Company, State Grid Shanxi Electric Power Company Dong Province Electric Power Company, State Grid Fujian Electric Power Company, State Grid Jibei Electric Power Company, Tsinghua University, Southeast University, State Grid Shaanxi Electric Power Company State Grid Ningxia Electric Power Co., Ltd., State Grid Hunan Electric Power Co., Ltd., State Grid Tianjin Electric Power Co., Ltd., State Grid Xinjiang Electric Power Co., Ltd: Co., Ltd., State Grid Beijing Electric Power Company, China Electric Power Research Institute Co., Ltd., Beijing Zhixin Microelectronics Technology Co., Ltd., China Southern Power Grid Co., Ltd., NARI Technology Co., Ltd., State Grid Information and Communication Industry Group Co., Ltd., State Grid Energy

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---First published in:1994 as GB/T 15148-1994, first revised in:2008;

1 Scope

GB/T 15148-2024 is the Chinese national standard on technical specifications for power load management system, 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 25 April 2024 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 November 2024. Classification: ICS 29.240.01, CCS F21. 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 establishes the technical principles and system architecture of the power load management system, and specifies the main station, data transmission Requirements for transmission channels, load management devices, safety, and testing: This document applies to the design, development, construction, operation and maintenance of power load management systems:

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:

GB/T 2887-2011 General Specification for Computer Sites

GB/T 4208-2017 Enclosure protection degree (IP code)

GB/T 22239-2019 Information security technology - Basic requirements for cybersecurity level protection

GB/T 31464 Power grid operation guidelines

GB/T 36572 Guidelines for network security protection of power monitoring systems

GB/T 39786-2021 Information security technology Basic requirements for the application of cryptography in information systems DL/T 533 Power Load Management Terminal

3 Terms and definitions

The following terms and definitions apply to this document: 3:

1 Power load powerload The total amount of electric power drawn from or sent to the power system by the load equipment of the power user at a certain moment: 3:

2 Monitor, adjust and control power loads based on computer application technology, information transmission technology and power automatic control technology and operation-optimized real-time monitoring system: 3:3 A device deployed on the user side that can realize the functions of power load data collection, storage, analysis, calculation, and load regulation and control: 3:4 A device that monitors and controls user branch interruptible load resources and supports the power load management system to achieve fine control of user loads: 3:

5 Monitor and regulate user-side load resources such as user branch loads, customer-side energy storage, and distributed energy, and support power load management systems: