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

GB/T 44219-2024

**Technical requirements of safety protection for demand
response system**

电力需求响应系统安全防护技术要求

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Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and Definitions	1
4 General safety protection rules	2
5 Safety protection technology system	3
6 Infrastructure Security	3
7 Architecture Security	4
8 System Safety	5
9 Reference	10

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. 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 Smart Grid User Interface Standardization Technical Committee (SAC/TC549). This document was drafted by: China Electric Power Research Institute Co., Ltd., State Grid Shanghai Electric Power Company, China Southern Power Grid Research Institute Co., Ltd. Company, State Grid Smart Grid Research Institute Co., Ltd., State Grid Siji Network Security Technology (Beijing) Co., Ltd., State Grid Shandong Electric Power Company Sales Service Center (Metering Center), State Grid Zhejiang Electric Power Co., Ltd. Hangzhou Power Supply Company, State Grid Gansu Electric Power Company, State Grid Shandong Electric Power Company Economic and Technological Research Institute of Power Corporation, Inner Mongolia Electric Power Group Economic and Technological Research Co., Ltd., China Electricity Council (Beijing) Technology Development Co., Ltd. Co., Ltd., Guizhou Power Grid Co., Ltd., Beijing Nanrui Purui Power Technology Co., Ltd., and Shaanxi University of Science and Technology. The main drafters of this document are. Chen Ke, Chen Songsong, Wu Yajie, Zhao Jianli, Zheng Qingrong, Hou Zhansheng, Wang Tao, Suo Siliang, Zhang Chongchao, Zhang Haijing, Liu Qiang, Ren Mingyuan, Wang Peng, Zhao Chenxu, Yang Di, Wang Shuyang, Wang Weidong, Ye Wenbo, Zhang Hua, Liu Kai, Liu Yaoxian, and Wang Tengyan. Technical requirements for safety protection of power demand response system

1 Scope

GB/T 44219-2024 sets the security protection requirements for power demand response systems. A demand response platform is a control system in everything but name: it reaches from the dispatch centre out to aggregators, building management systems, industrial loads and increasingly to chargers and home devices, and an attacker who could command a large enough block of that capacity to switch at once would be attacking the grid itself. The standard follows the Chinese power system security doctrine of partitioning, dedicated networks, horizontal isolation and vertical authentication. It sets the general protection rules and the protection technology system, then the infrastructure security, the architecture security, the system security and the trusted security immunity requirements, with an informative annex describing the structure of a demand response system. It takes effect on 1 February 2025.

This document establishes the general principles and technical system for safety protection of the power demand response system, and stipulates the Infrastructure security requirements, architecture security requirements, system entity security requirements and trusted security immunity requirements. This document applies to the design, development, construction, deployment and operation and maintenance of electricity demand response 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 20272 Information security technology Operating system security technical requirements

GB/T 20273 Information security technology - Technical requirements for security of database management systems

GB/T 22239 Information security technology Network security level protection basic requirements

GB/T 32672 General technical specification for power demand response system

GB/T 36572-2018 Guidelines for network security protection of power monitoring systems

GB/T 37092 Information security technology - Security requirements for cryptographic modules

GB/T 37138 Implementation Guide for Security Level Protection of Power Information

Systems

GB/T 39786 Information security technology Basic requirements for the application of cryptography in information systems

GB/T 43697 Data security technology data classification and grading rules

3 Terms and definitions

The terms and definitions defined in GB/T 32672, GB/T 36572-2018 and the following apply to this document.

3.1 Demand response system demandresponsesystem Through two-way information interaction, a software and hardware system with functions such as demand response information processing, operation monitoring, business management, and plan supervision is realized. Note

1.It consists of demand response service system, demand response aggregation system and demand response terminal.

Note 2."Demand response system" is the abbreviation of "electricity demand response system". [Source: GB/T 32672-2016, 3.2, modified]

3.2 demand response service system demand response service system Through two-way information interaction, it provides information processing, operation monitoring and business management for demand response service managers to implement demand response business. And other supporting functions of the hardware and software system.

Note. According to the characteristics, it is divided into management functions and interface service functions. [Source: DL/T 2117-2020, 3.2, modified]

3.3 Demand response aggregation system demand response system for aggregation Through two-way information interaction, it provides information processing, operation monitoring, business management and other support for demand response aggregators to implement demand response services.