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**Technical requirements for AC distribution networks of 10 kV
and below**

配电网通用技术导则

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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. 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 is proposed and coordinated by the China Electricity Council. This document was drafted by: State Grid Beijing Electric Power Company Electric Power Research Institute, China Electric Power Research Institute Co., Ltd., State Grid Co., Ltd., State Grid Shanghai Electric Power Company, Guangdong Power Grid Co., Ltd. Guangzhou Power Supply Bureau, State Grid Zhejiang Electric Power Co., Ltd. Jiaxing Power Supply Power Company, State Grid Jiangsu Electric Power Co., Ltd. Electric Power Research Institute, State Grid Nanjing Control System Co., Ltd., Gansu Dentsu Electric Power Engineering Co., Ltd. Cheng Design Consulting Co., Ltd., China Southern Power Grid Research Institute Co., Ltd., State Grid Jibei Electric Power Co., Ltd. Qinhuangdao Power Supply Company, Beijing Huisi Huineng Technology Co., Ltd. The main drafters of this document are. Li Hongtao, Hou Yiming, Ning Xin, Gui Yuan, Liu Wei, Xu Chang, Liao Tianming, Cai Yueming, Wang Jianzhong, Sun Jian, Pang Mingyuan, Lu Qi, Ji Kunhua, Yu Haiping, Yang Qiaoyin, Yuan Yubo, Mao Zhiyu, Hou Shichang, Cui Lizhong, Hao Liang. General technical guidelines for distribution networks

1 Scope

China's national technical requirements for AC distribution networks at 10 kV and below. This is the part of the power system the customer actually connects to, and it is where the transition now bites hardest. A distribution network was designed to carry power one way, from the substation outward, with loads that were diverse and predictable. It now hosts rooftop photovoltaic that reverses the flow at midday, electric vehicle charging that concentrates load in the evening, heat pumps, and storage that does both - and China is adding all of them faster than anywhere else. The consequence is that planning rules, protection settings, voltage management and the equipment itself all need revisiting together, which is what a comprehensive technical standard can do and a series of amendments cannot. It covers planning, network structure and equipment, construction and refurbishment, operation and maintenance, customer supply connection and the secondary systems, and may be referenced for 20 kV networks.

This document specifies the planning, grid structure and equipment, construction and transformation, operation and maintenance, users and Technical requirements for power supply access, secondary system, etc. This document is applicable to the planning, construction, transformation and operation and maintenance of 10kV and below AC distribution networks, and can be used as a reference for 20kV distribution networks.

2 Normative references

The contents of the following documents constitute 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 156 Standard Voltage

GB 3096 Acoustic Environment Quality Standard

GB/T 12325 Power quality supply voltage deviation

GB/T 13955 Installation and operation of residual current operated protective devices

GB/T 14285 Technical specification for relay protection and safety automatic devices

GB.20052 Energy efficiency limit values and energy efficiency grades for power transformers

GB/T 29328 Technical specification for power supply and self-provided emergency power supply configuration for important power users

GB/T 33593 Technical requirements for grid-connected distributed power sources

GB/T 33982 Technical Specification for Grid-connected Relay Protection of Distributed Generation

GB/T 36278 Technical specification for connecting electric vehicle charging and swapping facilities to distribution networks

GB/T 36547 Technical regulations for the connection of electrochemical energy storage power stations to the power grid

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

GB/T 43025 Technical Guidelines for Power Supply Schemes for User Access to the Grid

GB/T 43456 Electricity inspection specification