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**NATIONAL STANDARD OF THE
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**Technical requirements for the integration of customers with
high power quality demands**

高电能质量需求用户接入电网技术要求

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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 is required. 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 National Technical Committee for Standardization of Voltage, Current Levels and Frequency (SAC/TC1). This document was drafted by: State Grid Jiangsu Electric Power Co., Ltd. Electric Power Research Institute, China Machinery Productivity Promotion Center Co., Ltd., Wuhan University, Xi'an Boyu Electric Co., Ltd., South China University of Technology, State Grid Ningxia Electric Power Co., Ltd. Electric Power Research Institute, Shenzhen Power Supply Bureau Co., Ltd. Company, Guangdong Power Grid Co., Ltd. Electric Power Research Institute, State Grid Anhui Electric Power Co., Ltd. Electric Power Research Institute, State Grid Fujian Electric Power Co., Ltd. Electric Power Research Institute of China Electric Power Co., Ltd., China National Nuclear Corporation, Electric Power Research Institute of State Grid Shanxi Electric Power Co., Ltd., Southwest Jiaotong University Jiangsu Provincial People's Hospital, State Grid Hubei Electric Power Co., Ltd. Electric Power Research Institute, Sichuan University, Shandong Taikai Automation Co., Ltd., Nanjing High Speed Gear Manufacturing Co., Ltd., Shenzhen China Electric Power Technology Co., Ltd., Pushtong (Beijing) Electric Co., Ltd., Huahe Nuclear Power Gas Co., Ltd. The main drafters of this document are. Shi Mingming, Chen Hongkun, Liu Jing, Zhang Ping, Shi Shuaibin, Liu Juncheng, Zhong Qing, Fei Juntao, Zheng Xian, Huang Yongning, Wang Ling, Ji Changan, Lin Yan, Meng Zhaojun, Li Jiahui, Ma Ming, Zhang Min, Xie Shaofeng, Yu Jianyu, Huang Zengrui, Wang Ying, Zhang Yubin, Wang Xin, Guo Zhaojing, Zhang Bo, Qu Xuejing and

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1 Scope

China's national technical requirements for connecting customers whose processes demand high power quality. The customers in question are semiconductor fabs, display panel plants, precision manufacturing and data centres, and their difficulty is that the grid's ordinary quality is not good enough for them. A voltage dip of a tenth of a second - caused by a fault kilometres away on a different feeder, cleared correctly by the protection, and unnoticed by every other customer - will trip a fab's process tools and scrap a day's wafers. Nothing is wrong with the network; the sensitivity is the customer's. So the requirements have to allocate responsibility between them: what quality the network undertakes to provide, what immunity the customer's equipment must have, and what mitigation - dynamic voltage restorers, uninterruptible supplies, ride-through - the customer installs on their own side of the meter.

This document specifies the general requirements for users with high power quality requirements to access the power grid, grid connection requirements, technical requirements for power suppliers, high power quality requirements, Technical requirements for users with quality needs and technical requirements for power quality monitoring and evaluation at assessment points. This document applies to power quality management during the planning, design, grid connection and operation of users with high power quality requirements accessing the power grid.

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 17626.30 Electromagnetic compatibility test and measurement technology Power quality measurement method

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Power supplier A market member that provides electricity and power to users in accordance with the contract. [Source: GB/T 2900.87-2011, 617-02-08, modified]

3.2 Power userpowercustomer Electricity consumers who establish electricity supply and

consumption relationships with electricity suppliers in accordance with contracts, as well as customers who purchase electricity products or receive services. [Source: GB/T 32507-2016, 2.1.18, modified]

3.3 sensitive load sensitiveload Loads whose power quality requirements exceed the range specified by power quality standards. [Source: GB/T 32507-2016, 2.1.26, modified]

3.4 point of connection The connection reference point between the user's power equipment and the power system. [Source: GB/T 2900.87-2011, 617-04-01]

3.5 Power users with sensitive loads or special power quality requirements.

3.6 Checkpoint The power quality indicator measurement points agreed upon by both parties in the power supply and use agreement. [Source: DL/T 1198-2013, 3.9, modified]