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GB/T 46810-2025

**Technical requirements for the security protection of power
time synchronization systems based on the BeiDou navigation
satellite system**

电力北斗时间同步系统安全防护技术要求

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Electricity Council. This document is under the jurisdiction of the National Technical Committee on Standardization of Power System Management and Information Exchange (SAC/TC82). This document was drafted by: State Grid Electric Power Research Institute Co., Ltd., Nanjing NARI Information & Communication Technology Co., Ltd., and National Power Dispatch Center. Control Center, China Power Engineering Consulting Group North China Electric Power Design Institute Co., Ltd., China Southern Power Grid

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1 Scope

GB/T 46810-2025 is the Chinese national standard covering protecting the clock of a power system - the protection, the fault recorders and the synchrophasors all depend on time to the microsecond, and a spoofed satellite signal can shift that time without anything appearing to fail. First edition, and it is the security half of the timing standards published alongside the civil aviation one, GB/T 46932-2025. It was issued on 31 December 2025 and has been in force since 1 July 2026, as a first edition. The document is under the responsibility of the China Electricity Council. This page is published from the official record of the 2025 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the general requirements, system structure protection

requirements, and system boundary protection requirements for the security protection of the power grid BeiDou time synchronization system. and equipment body protection requirements. This document applies to the design, development, production, testing, construction, and operation of power grid BeiDou time synchronization systems.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 36050 Basic Provisions for Time Synchronization of Power Systems

GB/T 36470-2018 Information Security Technology - General Security Functional Requirements for Field Measurement and Control Equipment in Industrial Control Systems

GB/T 36572 Guidelines for Network Security Protection of Power Monitoring Systems DL/T 1100.1 Time Synchronization System for Power Systems - Part

1. Technical Specifications DL/T 1100.5 Time Synchronization Systems for Power Systems - Part

3 Terms and Definitions

The terms and definitions defined in DL/T 1100.1 and the following terms and definitions apply to this document.

3.1 Timing service The time synchronization device in the power grid BeiDou time synchronization system provides time synchronization services for the time-synchronized equipment.

3.2 monitoring interface External interaction interface for equipment operation and safety information in the power grid BeiDou time synchronization system.

3.3 Spoofing signal An analog satellite navigation signal that can cause a satellite receiver to output an abnormal position and/or time.

3.4 ground timing A time synchronization method that uses a communication channel to transmit time information from a ground time source to a time synchronization system.

3.5 unidirectional timing The IRIG-B code and PPS/PPM/PPH/PPD TOD technologies are used to achieve one-way transmission of time information.

3.6 Network timing Time synchronization based on Ethernet/IP networks can be achieved using technologies such as NTP/SNTP and PTP.