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

GB/T 32900-2016

Replacing GB/T 32900-2016

**Technical requirements for relaying protection of photovoltaic
power station**

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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.

This document replaces GB/T 32900-2016 "Technical Specification for Relay Protection of Photovoltaic Power Stations". Compared with GB/T 32900-2016, except for...

Aside from structural adjustments and editorial changes, the main technical changes are as follows.

---The scope of the document has been changed (see Chapter 1, Chapter 1 of the.2016 edition);

---Added some terms and definitions (see 3.5, 3.13, 3.14);

---Added requirements for the photovoltaic power station setting calculation model and parameters (see 4.9);

---Added requirements for the operating performance of protection devices under low short-circuit ratios (see 4.10);

---Added performance requirements for current transformers used in relay protection (see 4.11);

---Added requirements related to the access of the collection system to voltage levels of 35kV and below (see 5.1.6);

---Added requirements for the configuration and setting of small current grounding protection in single-bay protection devices under the neutral point grounding via arc suppression coil (see...)

5.1.7, 6.1.15);

- Added operating requirements for grounding transformers under special operating modes and main step-up transformer wiring configurations (see 5.1.8 and 5.1.10);
- The configuration and setting requirements for the collection line protection have been changed (see 5.2, 6.2, and 5.2 and 6.2 in the.2016 version);
- The protection configuration and setting requirements for the sectionalizing circuit breakers on the busbar have been changed (see 5.4, 6.4, and 5.4 and 6.4 in the.2016 version);
- The protection configuration and setting requirements for the main step-up transformer have been changed (see 5.5, 6.5, and 5.5 and 6.5 in the.2016 version);
- The protection configuration and setting requirements for reactive power compensation equipment have been changed (see 5.6, 6.6, and 5.6 and 6.6 in the.2016 version);
- The protection configuration and setting requirements for station service transformers have been revised (see 5.7, 6.7, and 5.7 and 6.7 in the.2016 version);
- The configuration and setting requirements for grounding transformer protection have been revised (see 5.8, 6.8, and 5.8 and 6.8 in the.2016 version);
- The protection configuration and setting requirements for photovoltaic inverters and energy storage converters have been revised (see 5.9, 6.9, and 5.9 and 6.9 in the.2016 version);
- The protection configuration and setting requirements for unit transformers have been changed (see 5.10, 6.10, and 5.10 and 6.10 in the.2016 version);
- Added protection configuration and setting requirements for isolation transformers (see 5.11, 6.11);
- The configuration and setting requirements for low-current grounding fault location devices have been revised (see 5.12, 6.12, and 5.11 and 6.11 in the.2016 version);
- The anti-islanding protection configuration and setting requirements have been changed (see 5.13, 6.13, and 5.12 and 6.12 in the.2016 version);
- Added configuration requirements for fault information management devices (substations) (see 5.14.5~5.14.7);
- Added requirements for transformer neutral point grounding method (see 6.1.5);
- Added requirements for reclosing functionality for transmission lines with voltage levels of 110kV and below (see 6.1.13);
- Added general requirements when protection devices are simultaneously connected to the dispatching agency for regulation and the photovoltaic power station for self-management (see 7.1.7).

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 and is under the jurisdiction of the China Electricity Council.

1 Scope

This document specifies the general requirements, configuration requirements, setting requirements, and setting management requirements for relay protection of photovoltaic power stations.

This document applies to relay stations connected to the grid at voltage levels of 10kV and above (including photovoltaic power stations equipped with electrochemical energy storage).

Research and development, design, manufacturing, testing, commissioning, scheduling, operation, maintenance, and repair related to electrical protection. Other grid-connected photovoltaic power generation at different voltage levels.

The station shall follow suit.

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 14285-2023 Technical Specification for Relay Protection and Safety Automatic Devices

GB/T 14598.24 Measuring relays and protective devices - Part 24. Transient data exchange (COMTRADE) for power systems

Use format

GB/T 19964-2024 Technical Specifications for Connecting Photovoltaic Power Stations to Power Systems

GB/T 20840.2 Instrument Transformers - Part 2. Supplementary Technical Requirements for Current Transformers

GB/T 29319 Technical Specifications for Photovoltaic Power Generation Systems Connected to Distribution Networks

GB/T 34120 Technical requirements for energy storage converters in electrochemical

energy storage systems

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

GB/T 37408-2019 Technical Requirements for Grid-Connected Photovoltaic Inverters

GB/T 40864 Technical requirements for relay protection of flexible AC transmission equipment connected to the power grid

DL/T 553 General Technical Conditions for Dynamic Recording Devices in Power Systems

DL/T 559 Operation and Setting Procedures for 220kV~750kV Power Grid Relay Protection Devices

DL/T 584 Operation and Setting Procedures for 3kV~110kV Power Grid Relay Protection Devices

DL/T 866 Selection and Calculation Procedures for Current Transformers and Voltage Transformers

DL/T 1455 Technical Requirements for Security and Evaluation of Power System Control Software

NB/T 32004 Technical Specification for Photovoltaic Grid-Connected Inverters

NB/T 42088 Technical Specification for Substations of Relay Protection Information System

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1

This includes photovoltaic power generation systems and all types of buildings, electrical equipment, and auxiliary facilities that provide operation, inspection, and maintenance services for them.

The power plant inside.

[Source. GB 50797-2012, 2.1.6, with modifications]