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

GB/T 29320-2024

**Technical requirements for solar tracking system of
photovoltaic power station**

光伏电站太阳跟踪系统技术要求

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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. This document replaces GB/T 29320-2012 "Technical requirements for solar tracking systems in photovoltaic power plants" and is consistent with GB/T 29320-2012. In addition to structural adjustments and editorial changes, the main technical changes are as follows:

--- Changed the scope of application of the document (see Chapter 1, Chapter 1 of the.2012 edition);

--- Deleted the provisions on the method of compiling tracking system models (see Appendix B of the.2012 edition);

--- Changed the wind speed condition for the tracking system to automatically enter the

shelter state, and added the wind speed condition for the tracking system to automatically release the shelter state (see 8.1.2, 8.1.3,

4.2.1 of the.2012 edition);

--- Deleted "In wind resistance state, the tracking system should be able to withstand a wind speed of 33m/s; in areas with wind speeds above level 12, it should be able to withstand 42m/s wind speed" requirement (see

4.2.1 of the.2012 edition);

--- Deleted the requirement that "in snowy areas, the tracker system should have manual or automatic snow avoidance function" (see

4.2.2 of the.2012 edition);

--- Changed the normal working conditions of the tracking system (see Chapter 5, 4.2.3, 4.2.4,

4.2.5 of the.2012 edition);

--- The anti-corrosion requirements for steel supports have been changed (see 4.3, 4.2.7.1, 4.2.7.2,

4.2.7.3 of the.2012 edition);

1 Scope

GB/T 29320-2024 sets the technical requirements for solar trackers in photovoltaic power stations. Trackers now carry the majority of new utility-scale capacity because the extra yield outweighs their cost, but they turn a static structure into a machine with drives, bearings and a control system standing in the open for twenty-five years, and their characteristic failures are structural: the wind loads on a large tracker depend on its stow strategy and on the aeroelastic behaviour of a long torque tube, and rows have been destroyed in wind events that the modules alone would have survived. The standard sets the classification and composition, then the requirements: the tracking accuracy and the control algorithm, the mechanical structure and its strength, stiffness and deflection, the drive and transmission, the wind protection and the stow strategy and its actuation, the electrical and control system and its communications, the protection, reliability and durability, and the corrosion protection, followed by the test methods and inspection rules. It took effect on 23 August 2024.

This document specifies the normal working conditions, appearance, structure, function, The technical requirements for performance, as well as inspection rules, marking, packaging, transportation and storage, describe the corresponding test methods. This document applies to the design, manufacture, installation, commissioning, acceptance, testing, operation and maintenance of solar tracking systems for photovoltaic power

stations.

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 191 Pictorial markings for packaging, storage and transportation

GB/T 2423.3 Environmental testing Part

3 Radio frequency electromagnetic field radiation immunity test

GB/T 17626.4 Electromagnetic compatibility test and measurement technology Electrical fast transient pulse group immunity test

GB/T 17626.5 Electromagnetic compatibility test and measurement technology Surge (impact) immunity test

GB/T 17626.6 Electromagnetic compatibility test and measurement technology - Immunity to conducted disturbances induced by radio frequency fields

GB/T 17626.8 Electromagnetic compatibility test and measurement technology Power frequency magnetic field immunity test

GB/T 17626.11 Electromagnetic compatibility test and measurement technology Part

11.Equipment with input current less than or equal to 16A per phase Voltage dips, short interruptions and voltage variations immunity test

GB/T 17627 High voltage test technical definitions, test and procedure requirements, and test equipment for low voltage electrical equipment

GB/T 18802.11 Low voltage surge protective device (SPD) Part

11.Performance requirements and specifications of surge protective devices for low voltage power supply systems

6 Inspection

GB/T 17626.2 Electromagnetic compatibility test and measurement technology Electrostatic discharge immunity test

GB/T 17626.3 Electromagnetic compatibility test and measurement technology Part