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GB/T 44680-2024

Wind energy generation systems - Technical code of practice for the safety evaluation of offshore wind farms

风能发电系统 海上风力发电场安全性评价技术规程

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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 was proposed by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee for Standardization of Wind Power Generation (SAC/TC 50). This document was drafted by: China Huaneng Group Co., Ltd., China Huaneng Group Clean Energy Technology Research Institute Co., Ltd., China Yangtze River Delta Group Guangdong Branch of China Three Gorges Corporation, Beijing

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1 Scope

GB/T 44680-2024 is the Chinese code of practice for evaluating the safety of an offshore wind farm. Offshore wind carries risks that onshore does not: personnel are transferred between a moving vessel and a fixed structure, work is done at height over water, rescue is hours away rather than minutes, the structures are exposed to typhoons and to scour, and the electrical infrastructure sits in salt water. China now has one of the largest offshore fleets in the world, much of it in a typhoon zone, which is why the safety evaluation is standardised rather than left to each owner. The document sets out the scope and the content of the evaluation, the evaluation of the design and of the construction phase, of the turbines, the foundations, the offshore substation and the submarine cables, of the marine operations and the personnel transfer arrangements, of the fire and emergency provisions, of the operation and maintenance organisation and its competence, and of the emergency response and rescue capability, together with the evaluation method, the grading of the findings and the report. For an owner, an operator, a regulator or an insurer in China, this is the assessment framework.

This document specifies the evaluation items, evaluation methods, evaluation basis and risk

level evaluation for the safety evaluation of offshore wind farms during operation. Fixed content. This document is applicable to the safety assessment of offshore wind farms that have been connected to the grid and operated at full capacity.

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 32128 Offshore wind farm operation and maintenance regulations

GB/T 51308 Design standard for offshore wind farms

3 Terms and definitions

The terms and definitions defined in GB/T 32128 and GB/T 51308 and the following apply to this document.

3.1 Submarine cable Power transmission cables and communication cables laid on the seabed with high mechanical strength and corrosion resistance.

Note. Submarine cables include sending submarine cables and collecting submarine cables.

3.2 method of safety checklist Analyze various risk factors in offshore wind farm systems and equipment, mechanical devices, operation management, and organizational measures using safety checklists. The method of vegetarian.

4 General

4.1 The first safety assessment of an offshore wind farm should be conducted within one year after the wind farm is fully connected to the grid. Conduct safety assessments regularly.

4.2 The safety assessment of offshore wind farms is divided into self-inspection by the offshore wind farm operator and expert evaluation. The bank shall organize internal management and technical personnel to carry out the evaluation, and the expert evaluation shall be organized by the superior competent unit of the wind farm operating unit for no less than The evaluation was carried out by a team of three experts.

4.3 Safety of offshore wind farms is evaluated based on three indicators. facilities and equipment, labor safety and working environment, and production management. The evaluation items of various evaluation indicators should refer to GB/T 32128, DL/T 796,

DL/T 797, NB/T 10322, NB/T 10579 and NB/T 10996.

4.4 The safety checklist method should be adopted for the safety assessment of offshore wind farms.