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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 33423-2024

Technical specification for corrosion control of coastal and offshore wind turbines

沿海及海上风电机组腐蚀控制技术规范

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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 33423-2016 "Technical Specification for Corrosion Protection of Coastal and Offshore Wind Turbines" and is consistent with GB/T 33423-2016: In addition to structural adjustments and editorial changes, the main technical changes are as follows:

a) The scope of application has been changed (see Chapter 1, Chapter 1 of the:2016 edition);

b) Added the overall requirements for the entire life cycle of corrosion control projects for coastal and offshore wind turbines (see 4:1, 4:2 and 4:5), and changed the requirements for corrosion control projects for coastal and offshore wind turbines: Quality assurance level and seismic and typhoon resistance level requirements of the protection system (see 4:2, 4:2 and 4:3 of the:2016 edition);

c) Added general requirements for corrosion control measures (see 4:3) and requirements for the design life of corrosion control (see 4:4);

d) Added the requirements for the qualifications of corrosion control design and construction units, construction equipment, and design, construction, and quality control personnel (see 4:6);

e) Added requirements for new materials, new technologies and new processes for corrosion control (see 4:7);

f) Added environmental zoning and corrosion control measures for coastal and offshore

wind turbines (see Chapter 5);

g) Deleted the requirements for coastal hydrogeology and marine biological resources survey when protective coatings and cathodic protection are used (see:2016 4:1 of the year);

h) Added environmental protection requirements for coating materials (see 6:1:2);

i) Deleted the following information: epoxy coating system should be used for coating protection design, thermal spray zinc sealer and coating should be used with thermal spray coating Compatibility related content [see 5:1b) and

c) of the:2016 edition];

j) Changes have been made to the steel structure and equipment protective coating system and performance requirements, epoxy zinc-rich primer performance requirements, and thick-build wear-resistant epoxy coating system: Performance requirements for epoxy glass flake coatings (see 6:2:1, 5:2 of the:2016 edition), and the low surface treatment epoxy coating has been deleted Performance requirements (see 5:2 of the:2016 edition);

k) Changed the protective coating application (see 6:2:2, 5:3, 5:4, 5:6 of the:2016 edition), deleted the minimum thickness requirement for thermal spray coating See 5:3:2:1 of the:2016 edition;

l) Modified the protective coating quality inspection (see 6:2:3, 5:5 of the:2016 edition) and the protective coating in-service inspection and maintenance requirements (see 6:2:4, 5:8 of the:2016 edition);

1 Scope

GB/T 33423-2024 is the Chinese technical specification for controlling corrosion in coastal and offshore wind turbines. Offshore wind is the harshest corrosion environment in ordinary engineering: the structure stands in seawater, through a splash zone that no coating survives easily, in an atmosphere of salt spray, and the turbine must run for twenty-five years with access that is expensive and weather-limited. The standard sets the corrosion zones and the environmental categories, the design requirements for corrosion control including the corrosion allowance and the detailing that avoids traps and crevices, the protective coating systems specified by zone and by component with their surface preparation, thickness and inspection, the cathodic protection of the submerged and buried structure with its design, materials and monitoring, the internal protection and dehumidification of the tower and nacelle, the protection of the fasteners, blades and mechanical components, and the inspection, monitoring and maintenance regime over the life of the machine. It takes effect on 1 November 2024.

This document specifies the overall requirements for corrosion control of offshore wind turbines and onshore coastal wind turbines within 10 km of the coastline, corrosion control

requirements, and Technical requirements for control measures, coating protection, cathodic protection, corrosion monitoring, as well as safety, health and environmental protection requirements: This document applies to the foundation, tower, wind rotor-nacelle assembly of offshore wind turbines and onshore coastal wind turbines within 10km of the coastline: Corrosion control of parts and equipment:

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 1724 Determination of fineness of grinding of paints, varnishes and printing inks

GB/T 1725 Determination of non-volatile matter content of paints, varnishes and plastics

GB/T 1728 Determination of drying time of paint and putty films

GB/T 1731 Determination of flexibility of paint and putty films

GB/T 1732 Determination of impact resistance of paint films

GB/T 1733-1993 Determination of water resistance of paint films

GB/T 1740 Determination of moisture and heat resistance of paint films

GB/T 1768 Determination of abrasion resistance of paints and varnishes - Rotating rubber wheel method

GB/T 1770 Determination of polishability of coatings and putty films

GB/T 1865 Paints and varnishes - Artificial weathering and exposure to artificial radiation - Filtered xenon arc radiation

GB/T 4948 Aluminum-zinc-indium alloy sacrificial anode

GB/T 4950 Zinc alloy sacrificial anode

GB/T 5210 Paint and varnish adhesion test by pull-off method GB/T 5267: