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PEOPLE'S REPUBLIC OF CHINA**

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**Marine energy - Wave, tidal and other water current converters -
Part 10: Assessment of mooring system for energy converters**

海洋能 波浪能、潮流能及其他水流能转换装置 第10部分：海洋能转换装置锚泊
系统评价

(English Translation)

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Reference

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 is Part 10 of the "Ocean Energy Wave Energy, Tidal Current Energy and Other Water Flow Energy Conversion Devices".

The following parts have been published.

---Terms for devices for converting ocean energy into wave energy, tidal energy and other water flow energy (GB/Z 37551);

--- Design requirements for marine energy systems (GB/T 41088);

--- General Guidelines for Design and Analysis of Ocean Thermal Energy Conversion Power Plants (GB/Z 43521);

--- Power quality requirements for ocean energy conversion devices (GB/Z 43464);

--- Evaluation of power generation performance of wave energy conversion devices (GB/Z 40295);

--- Assessment and characterization of wave energy resources (GB/T 39571);

--- Tidal current energy resource assessment and characterization (GB/T 39569);

--- Evaluation and characterization of river energy resources (GB/Z 43465);

---Ocean energy - Wave energy, tidal energy and other water flow energy conversion devices - Part 3: Mechanical load measurement (GB/Z 37551.3);

---Ocean energy wave energy, tidal energy and other water flow energy conversion devices Part 10: Evaluation of mooring systems for ocean energy conversion devices (GB/Z 37551.10);

---Ocean energy wave energy, tidal energy and other water flow energy conversion devices Part 102: Evaluation of wave energy using existing operational measurement data the power generation performance of the energy conversion device at another deployment location (GB/Z 37551.102).

This document is equivalent to IEC TS62600-10:2021 "Ocean energy wave energy, tidal energy and other water flow energy conversion devices Part 10 Part 1: Evaluation of anchoring systems for ocean energy conversion devices. The document type was adjusted from IEC technical specifications to my country's national standardization guidance technical specifications.

Technical documents.

The following minimal editorial changes were made to this document.

--- In Chapter 4, three abbreviations not used in the text, namely "DP", "MEP" and "UV", as well as two common abbreviations of ISO and IEC were deleted.

abbreviation;

--- Chapter 4 adds two terms, "DLC design load condition" and "NWLR normal water level range", which are frequently cited in the text but the original English Abbreviations not mentioned in the edition;

--- Chinese descriptions of three uncommon units, g/cc, g/den and cN/T ex, are added to Table A.2;

Stop, delete the reference in the references and delete the description of the reference in A.2.4.3.7 of Appendix A.

Introduction

As a marine energy conversion device widely used in public utilities and social power supply, the mooring system is an important prerequisite for its safe and reliable operation.

This document is based on the above requirements and provides developers, manufacturers and users with Ocean energy - Guidance on the evaluation of mooring systems for wave energy, tidal energy and other water flow energy conversion devices.

Conceptually, many ocean energy conversion devices, with the exception of wave energy

converters, work similarly to wind turbines.

There are few standards or technical specifications for the evaluation of mooring systems for energy conversion devices (including wave energy, tidal energy and other water flow energy).

The two sides are working together to develop detailed standards to address this issue.

In the structural design process of ocean energy conversion devices, it is extremely important to evaluate the performance of the mooring system itself and the coupling effect between it and the device.

During the design phase, the performance of the mooring system should be evaluated using relevant standards.

This document aims to.

--- Issues and reference indicators for the evaluation of mooring systems for wave energy, tidal energy and other water flow energy conversion devices;

--- Establish assessment methods and application technical guidelines.

--- Develop assessment procedures related to the design, installation and maintenance of mooring systems for ocean energy conversion devices.

This document will provide evaluation guidance for researchers designing and applying mooring systems for ocean energy conversion devices.

The "Ocean Energy Wave Energy, Tidal Energy and Other Water Flow Energy Conversion Device" is planned to consist of the following parts.

--- Part 1: Terminology. The purpose is to define the common terms in the three aspects of ocean energy conversion devices, namely, environment, technology and conversion devices.

Terms for wave energy, tidal energy and other water current energy.

--- Part 2: Design requirements for marine energy systems. The purpose is to specify wave energy, tidal energy and other water flow energy conversion device systems design requirements to ensure its engineering integrity.

--- Part 3: Mechanical load measurement. The purpose is to describe the marine energy conversion device (MEC) (including wave energy, tidal energy and other Method for measuring mechanical loads of water flow energy, specifying requirements for mechanical load measurements and full-scale structural testing of subsystems or components Require.

--- Part 4: New Technology Appraisal. The purpose is to provide the necessary practical and technical requirements for technology appraisal methods to support Requirements for the IEC RE certification process for marine renewable energy systems.