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NB

**ENERGY INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

NB/T 10867-2021

Replacing DL/T 5166-2002

Code for design of spillways

溢洪道设计规范

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Foreword

This document was issued on 22 December 2021 by the National Energy Administration of the PRC and takes effect on 22 June 2022.

It is a NB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

It is classified under ICS 27.140, Chinese classification P 59.

It replaces DL/T 5166-2002, which is superseded.

This code was revised in accordance with the requirements of the Notice of the National Energy Administration on Issuing the First Batch of Development and Revision Plans for Industry Standards in the Energy Sector for 2009 (Guo Neng Ke Ji [2009] No. 163). The drafting group carried out extensive investigation and research, carefully summarized practical experience and solicited opinions widely before completing the revision.

The main technical contents of this code are: general provisions; terms and symbols; basic requirements; layout of the spillway; hydraulic design; structural design; foundation and slope treatment design; safety monitoring design; construction requirements; and operation

and maintenance requirements.

The main technical contents revised in this edition are listed below.

Provisions concerning the design of tunnel spillways have been added.

Provisions concerning the reasonable service life of the spillway and concerning design against ice and freezing have been added.

Two new chapters, Construction Requirements and Operation and Maintenance Requirements, have been added.

The provisions on the grade of the spillway and of the energy dissipation and erosion control structures, and on the corresponding flood standards, have been revised.

The provisions on the anti-floating stability of the stilling basin slab and on the structural design of gravity sidewalls along the straight section of the chute have been revised; the single safety factor method is adopted for structural stability calculation, corresponding safety evaluation criteria are proposed, and Appendix C and Appendix D of the former code have been revised accordingly.

Appendix A of the former code has been revised, with the addition of hydraulic calculation formulas for flow fluctuation and aerated water depth in the chute, hydraulic calculation formulas for bottom-flow hydraulic jump energy dissipation, and criteria for discriminating the flow regimes of stepped energy dissipation.

The contents concerning probabilistic limit state design and the related calculations in structural design have been deleted.

The contents concerning overflow weirs with breast walls have been deleted.

This code is under the administration of the National Energy Administration. It was proposed by, and is under the day-to-day administration of, China Renewable Energy Engineering Institute. The Energy Industry Standardization Technical Committee for Hydropower Survey and Design (NEA/TC15) is responsible for the interpretation of its specific technical content.

Comments and suggestions arising during the implementation of this code should be sent to China Renewable Energy Engineering Institute, No. 2 Liupukang Beixiaojie, Xicheng District, Beijing, postcode 100120.

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Replaced standard: this code supersedes DL/T 5166-2002, the previous edition of the design code for spillways, as stated by the line printed under the designation on the cover.

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Structure of the document

The code is organised in ten chapters followed by four appendices and the usual closing matter. The official English table of contents printed in the standard is reproduced word for word in the index of this listing.

Chapters 1 to 3 set the framework: General Provisions (page 1), Terms and Symbols with the two sub-clauses Terms and Symbols (page 2), and Basic Requirements (page 6).

Chapter 4, Layout of Spillway (page 8), covers General Requirements, Entrance Channel, Control Section, Chute, Energy Dissipation and Erosion Control Facilities and Outlet