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NB

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

NB/T 10083-2018

Replacing DL/T 5105-1999

**Code for water conservancy computation of hydropower
projects**

水电工程水利计算规范

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Foreword

This document was issued on 29 October 2018 by the National Energy Administration of the PRC and takes effect on 1 March 2019.

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It replaces DL/T 5105-1999, which is superseded.

This code has been revised in accordance with the requirements of the Notice of the National Energy Administration on the Issue of the Second Batch of the 2014 Plan for the Development and Revision of Energy Sector Standards (Guo Neng Ke Ji [2015] No. 12). The drafting group carried out extensive investigation and research, earnestly summarized practical experience, and revised this code on the basis of a wide solicitation of opinions.

The main technical content of this code is: basic data; flood routing calculation; runoff regulation calculation; runoff regulation calculation for jointly operated hydropower projects; preparation of reservoir operation graphs; initial filling calculation for reservoir; sediment scour and deposition calculation for reservoir; backwater calculation for reservoir; water conservancy computation for projects with multiple purposes; and water conservancy computation for other particular problems.

The main technical changes introduced by this revision are set out in the six items that follow.

The provisions concerning initial filling calculation for reservoir, sediment scour and deposition calculation for reservoir, and backwater calculation for reservoir have been revised, and each of them has been made an independent chapter.

The main content of the water conservancy computation for pumped storage power stations and for tidal power stations has been revised.

The former subject runoff regulation of cascade hydropower stations and cross-basin compensation regulation calculation has been revised into runoff regulation calculation for jointly operated hydropower projects.

The former subject water conservancy computation for projects with other water use tasks has been revised into water conservancy computation for projects with multiple purposes.

A clause on scour and deposition calculation in the downstream river channel has been added.

The content relating to water conservancy computation for timber floating tasks has been deleted.

This code is under the administration of the National Energy Administration. The China Renewable Energy Engineering Institute has proposed this code and is responsible for its routine administration, while the Standardization Technical Committee for Hydropower Planning and Reservoir Environmental Protection of the Energy Sector is responsible for the interpretation of its specific technical content.

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

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Publication and approval data

This code is an energy sector standard of the People's Republic of China, numbered NB/T 10083-2018 and titled Code for Water Conservancy Computation of Hydropower Projects. Its Chinese title is printed on the cover as Shuidian Gongcheng Shuili Jisuan Guifan, and the code replaces DL/T 5105-1999.

The cover carries the international classification ICS 27.140, the Chinese standard classification code P 59, and the record number J15-2018. The mark NB in the upper right corner identifies the standard as belonging to the energy sector series administered by the National Energy Administration.

The standard was issued on 29 October 2018 and came into force on 1 March 2019, as printed on the cover in the form 2018-10-29 issued and 2019-03-01 implemented. The issuing body named on the cover is the National Energy Administration.

The title page states that the chief editing department is the China Renewable Energy Engineering Institute (Hydropower and Water Resources Planning and Design General Institute), that the approving department is the National Energy Administration, and that the effective date is 1 March 2019.

The standard was published by China Water and Power Press in Beijing in 2019.

The approval act is reproduced in the front matter as Announcement of the National Energy Administration, 2018 No. 12. Pursuant to the Notice on Issuing the Measures for the Administration of Standardization in the Energy Sector (Trial) and its implementing rules (Guo Neng Ke Ji [2009] No. 52), and following examination, the National Energy Administration approved 204 sector standards, comprising 54 energy standards (NB), 8 petrochemical standards (NB/SH) and 142 petroleum standards (SY), and issued them with that announcement dated 29 October 2018.

In the annexed catalogue of sector standards this document appears under serial number 38, with standard number NB/T 10083-2018, title Code for Water Conservancy Computation of Hydropower Projects, superseded standard DL/T 5105-1999, approval date 29 October 2018 and implementation date 1 March 2019.

Structure of the document

The body of NB/T 10083-2018 is organized in twelve chapters, followed by the explanation of wording, the list of quoted standards and the explanation of provisions. The page numbers below are those printed in the official English Contents of the standard.

Chapter 1, General Provisions, begins on page 1, and Chapter 2, Terms, on page 2.

Chapter 3, Basic Data, begins on page 3 and is divided into 3.1 General Requirements (page 3), 3.2 Hydrological Data (page 3), 3.3 Topographical and Geological Data (page 4), 3.4 Socioeconomic and Project Data (page 4) and 3.5 Multipurpose Data (page 5).

Chapter 4, Flood Routing Calculation, begins on page 6 and is divided into 4.1 General Requirements (page 6), 4.2 Principle and Content (page 6), 4.3 Flood Routing Calculation for Reservoir (page 7) and 4.4 Flood Routing Calculation for Cascade Reservoirs (page 9).

Chapter 5, Runoff Regulation Calculation, begins on page 10, and Chapter 6, Runoff Regulation Calculation for Jointly Operated Hydropower Projects, on page 13.

Chapter 7, Preparation of Reservoir Operation Graphs, begins on page 15, and Chapter 8, Initial Filling Calculation for Reservoir, on page 17.

Chapter 9, Sediment Scour and Deposition Calculation for Reservoir, begins on page 19, and Chapter 10, Backwater Calculation for Reservoir, on page 21.

Chapter 11, Calculation for Hydropower Project with Multiple Purposes, begins on page 23 and is divided into 11.1 Tasks and Principle (page 23), 11.2 Calculation for Project with Irrigation Purpose (page 23), 11.3 Calculation for Project with Water Supply Purpose (page 24) and 11.4 Calculation for Project with Navigation Purpose (page 24).

Chapter 12, Other Particular Calculations, begins on page 25 and is divided into 12.1 Downstream Unsteady Flow due to Hydropower Plant Daily Regulation (page 25), 12.2 Scour and Deposition in Downstream River Channel (page 26), 12.3 Dam-Break Flood