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

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Replacing DL/T 5208-2005

Code for design of pumped storage power stations

抽水蓄能电站设计规范

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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It replaces DL/T 5208-2005, which is superseded.

This code has been revised by the drafting group on the basis of extensive investigation and research, a careful summing-up of practical experience and a wide solicitation of opinions, in accordance with the requirements of the Notice of the National Energy Administration on Issuing the Plan for the Formulation and Revision of the First Batch of Energy Sector Industry Standards in 2012 (Guo Neng Ke Ji [2012] No. 83).

The main technical contents of this code are: hydrology; design of hydropower planning; engineering geological investigation; project general layout and hydraulic structure design; design of hydromechanical systems; design of electrical systems; control, protection and communication; design of hydraulic steel structure; construction planning; and economic evaluation.

The main technical contents revised in this code are as follows.

Added requirements for the work contents and the depth of work of each design stage.

Added requirements for the statistical analysis of meteorological elements.

Added requirements for the demonstration of the development purpose of the project.

Added requirements for the comparison of the pipe diameters of the water conveyance system.

Added requirements for the analysis of operation in coordination with wind power and other new energy bases.

Added the requirement that a functional and safety review be carried out when an existing reservoir is used.

Added requirements limiting the non-uniformity of the velocity distribution at the trash racks of the intake/outlet works, and principles for the arrangement of inspection and maintenance passages of the water conveyance system.

Added the requirement that the inlet valve shall not take part in the discharge regulation during the transient process of the design operating conditions of the water conveyance and power generation system.

Added requirements for the design of the power supply where the station undertakes a black start duty.

Added requirements for the design of the alternating current excitation system of variable speed units.

Added requirements for the design of the interlock between the inlet valve and the tailrace emergency gate.

Added requirements for the design of emergency shutdown of the units and emergency closing of the station emergency gates from within the central control room.

Added requirements for the design of high pressure valve type tailrace emergency gates.

Added the design standard for flood protection of the powerhouse during the construction period.

Added design requirements for the selection and exploitation of material sources.

Added requirements for the selection of spoil areas within the reservoir basin.

Revised the contents of the ice regime investigation and the requirements for ice regime analysis during the operation period.

Revised the requirements for the selection of the rated head.

Revised the requirements for the analysis of initial impoundment and for the design of the operation scheme of reservoir sediment flushing and dispatching.

Revised the requirements for the engineering geological investigation of natural construction materials within the reservoir.