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NATIONAL STANDARD OF
THE PEOPLE'S REPUBLIC OF CHINA

中华人民共和国国家标准 **GB**

Code for design of cooling
for industrial recirculating water

工业循环水冷却设计规范

GB/T 50102-2003

Issued date: April 15, 2003

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Republic of China

Ministry of Construction of the People's Republic of China

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Chief Edition Department: Northeast Electric Power Design Institute of State Power
Corporation of China

Approved by: Ministry of Construction of the People's Republic of China

Executed from: August 1, 2003

NOTE

This book is the English translation of Code for design of cooling for industrial recirculating water GB/T 50102-2003. In the event of any inconsistency between the Chinese-language text of the Code and the present English-language text of the Code, the Chinese-language text shall be taken as ruling.

Proclamation by Ministry of Construction

of the People's Republic of China

No. 141

Proclamation on the national standard publishing of Code for Design of Cooling for Industrial Recirculating Water by Ministry of onstruction

Code for Design of Cooling for Industrial Recirculating Water, in number of GB/T50102-2003, is hereby approved to be a national standard and executed from August 1, 2003. At meanwhile, the former Code for Design of Cooling for Industrial Recirculating Water GBJ102-87 is avoided.

This code is published by China Planning Press under the organization of Standard Norm Study Station of Ministry of Construction.

Ministry of Construction of the People's Republic of China

April 15, 2003

Forewords

Base on the requirement from the letter of Code of Design of cooling for Industrial Recirculating Water is approved to receive a fully revision which was issued by Standard Norm Bureau of Ministry of Construction, taken charged by State Power Corporation, concretely by Northeast Electric Power Design Institute of State Power Corporation and other related organizations, the national standard Code of Design of cooling for Industrial Recirculating Water (GBJ102-87), approved to execution by State Planning Commission with Jibiao [1987] No.384, is roundly revised.

During the revision, after widely investigation and study, careful conclusion on practical experience of the design, construction and operation of industrial recirculating water cooling facility from each domestic industrial department, in addition with opinion feedback in past more than 10 years since it was executed from 1987, adopting the newest technical progress in domestic and abroad field, referring the newest version of abroad similar codes, widely inquiring opinions from domestic related departments and experts, times rexision and discussion, the final version was confirmed by State Power Corporation jointly with other related departments.

The former code was divided into 4 chapters and 120 clauses. After revision, 4 chapters were kept and they are General, Cooling tower, Spray pond and water surface cooling. Clauses were added to 203 items and 2 attachments were added. Base on the original content on process design of industrial recirculating water cooling facilities, heat calculation and aerodynamical calculation of cooling tower, frequent formula in respect of the ratio of water surface evaporation and ratio of water surface comprehensive heat diffusion in water surface cooling calculation were added; Some data in the former clauses such as ratio of wind loss water of cooling tower, ratio between inlet area and spraying water area, height of mechanical ventilated cooling tower shell etc, were revised according to recent achievements of sentific research and practice. Although some of clauses were not revised, however, their specifications were revised or added according to recent achievements of sentific research and practice. Because the description in Clause 2.4 Open type cooling tower and each clause in Chapter 3 Spray pond are simple, clear and easy to apply, no specification was made on those clauses.

The content of revised code is more round with more operational clauses. Each cclause will benefit for safety producing, convenient construction, operation and maintenance with its advancing technology, economic and reasonable provisions. Well guidance on design of our industrial recirculating cooling surface will be achieved.

The practical explanation work of the code is in charged by Northeast Electric Power Design Institute of State Power Corporation. The address of the institute is: No.118, the People's Street, Changchun City, Jilin Province, Post Code 130021, Telephone number 0431-5642361.

Chief edition department: Northeast Electric Power Design Institute of State Power Corporation

Joint edition department: Northwest Electric Power Design Institute of State Power Corporation

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Contents

1 General.....	1
2 Cooling tower	2
2.1 General provisions	2
2.2 Mechanical draft cooling tower	10
2.3 Natural Draught Cooling Tower.....	12
2.4 Atmospheric cooling tower	12
2.5 Basic requirement and material for cooling tower structure design.....	13
2.6 Load and endogen force calculation of silo-type nature ventilated cooling tower.....	14
2.7 Load and endogen force calculation for mechanical ventilated cooling tower.....	21
2.8 Spraying device framing	22
2.9 Structural requirement.....	23
3 Spray pond.....	24
3.1 Process design of spray pond	24
3.2 Structure design of spray pond.....	25
4 Water surface cooling	26
4.1 General provisions	26
4.2 Cooling pond.....	28
4.3 Riverway cooling.....	30
4.4 Cooling at gulf	31
ATTACHMENT A Designed temperature value for shell inner wall	32
Attachment B Equivalent stationary load calculation method	33
Appendix Wording explanations for this code	34

1 General

1.0.1 This Code is applicable to process and structure design of new built or expanded open industrial circulating water cooling facilities.

1.0.2 The design of industrial circulating water cooling facilities shall comply with requirements of safety in production, economic rationality, energy, water and land saving, as well as convenient construction, operation and maintenance, etc.

1.0.3 The design of industrial circulating water cooling facilities shall be actively developed and adopts advanced technology on the basis of continuously summarizing practical production experience and scientific experiments.

1.0.4 Type selection of industrial circulating water cooling facilities shall be determined through economic and technological comparison in accordance with requirements of production process on the amount, temperature, quality of circulating water as well as operation mode of water supply system, by combining the following factors:

- 1 Local hydrology, meteorology, topography, geology and other natural conditions;
- 2 Supply conditions of materials, equipment, electric energy and make-up water;
- 3 Site arrangements and construction conditions;
- 4 Interaction between industrial circulating water cooling facilities and surroundings.

1.0.5 Industrial circulating water cooling facilities shall be close to major workshops using water and avoid building overlong water supply pipes and drain pipes, channels and complex hydraulic structures.

1.0.6 In addition to this Code, the design of industrial circulating water cooling facilities shall also comply with provisions of relevant national obligatory standards which are currently in effect.

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