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NB

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

NB/T 11564.6-2024

**Information classification and coding of hydropower projects -
Part 6: Steel structure**

水电工程信息分类与编码 第6部分：金属结构

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Foreword

This document was issued on 24 May 2024 by the National Energy Administration of the PRC and takes effect on 24 November 2024.

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.

This document was drafted in accordance with the rules given in GB/T 1.1-2020 Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents.

This document is Part 6 of NB/T 11564 Information classification and coding of hydropower projects.

Please note that some of the content of this document may be the subject of patent rights. The issuing body of this document assumes no responsibility for identifying patents.

This document is administered by the National Energy Administration and was proposed by the General Institute of Hydropower and Water Resources Planning and Design.

1 Scope

NB/T 11564.6-2024 is the Chinese standard that classifies and codes the hydraulic steel

structure information of a hydropower project, the sixth part of the NB/T 11564 series built on the general rules of NB/T 11563. The hydraulic steel structures are the moving parts of a dam: the gates and their trash racks, the hoists that lift them, the trash rakes that clear the racks, the ship lifts, the discharge valves and the penstocks that carry water to the turbines. They are the components that are operated, inspected, maintained and eventually replaced across the whole life of the plant, and unlike the concrete they are made up of thousands of individually identifiable items with their own characteristics - a gate has a span, a head, a seal type and an operating mode, a hoist has a capacity and a drive, a penstock has a diameter, a wall thickness and a steel grade. Keeping track of which item is which, over sixty years, across the handover from designer to constructor to operator, is exactly the problem a coding scheme solves. This part divides steel structure information into twelve major classes, and the structure of that division is the interesting part: each family of equipment is split into the item itself and its characteristics, so gates and trash rack facilities are one class and the characteristics of gates and trash rack facilities another, and the same pairing repeats for hoists, trash rakes, ship lifts, discharge valves and penstocks. That separation lets the identity of a component and its technical attributes be addressed independently, which is what makes the scheme usable in a database rather than only on paper. Below the major class the code grades down through medium, minor and sub-class levels, each of two Arabic numerals, with the steel structure discipline identified by the code 06 following the general project code. The three governing principles are the same as elsewhere in the series - uniqueness, systematisation and extensibility, with existing codes never changing when new objects are added - and the classification must proceed level by level with no empty level. The substance is the normative Annex A, thirty pages giving the name and code of every category of steel structure information. It was issued on 24 May 2024 by the National Energy Administration and took effect on 24 November 2024.

This document specifies the principles and the method of classifying and coding the steel structure information of hydropower projects, and gives the classification and the codes of that steel structure information.

This document applies to the classification and coding of steel structure information over the whole life cycle of a hydropower project: planning, design, construction, operation and decommissioning.

2 Normative references

The contents of the following documents constitute indispensable provisions of this document through normative reference in the text. For dated references, only the edition corresponding to that date applies to this document. For undated references, the latest edition, including all amendments, applies to this document.

GB/T 7027 Basic principles and methods for information classification and coding

GB/T 10113 General terms for classification and coding

NB/T 11563 General rules for information classification and coding of hydropower projects

3 Terms and definitions

3.1 classification

The process of distinguishing classification objects according to selected attributes or characteristics, and of grouping together those classification objects that share a common attribute or characteristic. [GB/T 10113-2003, definition 2.1.2, modified]

3.2 coding

The process of assigning a code to a thing or a concept. [GB/T 10113-2003, definition 2.2.1, modified]

3.3 code

A character or group of characters that represents a specific thing or concept. [GB/T 10113-2003, definition 2.2.5]

3.4 steel structure information

The information on the various kinds of gate and trash rack facility, hoist, trash rake, ship lift, discharge valve and penstock of a hydropower project.

4 Overall requirements

4.1 The classification and coding of the steel structure information of a hydropower project shall comply with the provisions of GB/T 7027 and NB/T 11563.

4.2 The classification of the steel structure information of a hydropower project shall follow the following principles:

- a) it shall cover every stage of the whole life cycle of the hydropower project, without repetition or overlap;
- b) it shall suit the actual practice of the steel structures of hydropower projects, and shall take characteristics that are stable as the basis of the classification;
- c) it shall form a systematic classification scheme, with the levels reasonably distributed, correctly reflecting the category or the subordination characteristics of the steel structure information;
- d) it shall facilitate the exchange and sharing of information;
- e) the classification of information at the same level shall leave room for extension, so that adding new information classes does not disturb the existing classification scheme.

4.3 The coding of the steel structure information of a hydropower project shall follow the following principles:

- a) the principle of uniqueness: different steel structure information is identified by different codes, and each code may identify one coding object only;
- b) the principle of systematisation: the codes are compiled from the results of the classification of the steel structure information, so forming a systematic code scheme;
- c) the principle of extensibility: the codes shall be extensible, so that when coding objects are added the corresponding codes can be added conveniently.

4.4 The codes of the steel structure information of a hydropower project shall satisfy the following requirements:

- a) the codes shall be expressed in Arabic numerals;
- b) the codes shall be simple, practical and easy to compile;
- c) the codes of the coding objects shall remain fixed, and the codes of existing coding objects shall not be changed when new coding objects are added.

5 Classification method

5.1 In view of the complexity of steel structure information and the characteristics of steel structure management in the hydropower industry, the steel structure information of a hydropower project is classified by a mixed classification method combining the facet classification method and the line classification method.

5.2 The steel structure information of a hydropower project is divided into twelve major classes: gates and trash rack facilities; characteristics of gates and trash rack facilities; hoists; characteristics of hoists; trash rakes; characteristics of trash rakes; ship lifts; characteristics of ship lifts; discharge valves; characteristics of discharge valves; penstocks; and characteristics of penstocks.

5.3 Each kind of steel structure information of a hydropower project shall be graded as required on the basis of the major class; the category levels in the code tables of this document extend to at most three levels, namely the medium class, the minor class and the sub-class.

5.4 The grading of each kind of steel structure information of a hydropower project shall proceed level by level in order, and there shall be no empty level.

6 Code structure

6.1 The code of the steel structure information of a hydropower project consists of the general information code and the special information code, the special information code being made up of the discipline identification code and the discipline category code. The code structure shall comply with the provisions of Figure 1.