

Translated English of Chinese Standard: GB/T12145-2016

www.ChineseStandard.net

Sales@ChineseStandard.net

GB

NATIONAL STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

ICS 27.060.30

J 98

GB/T 12145-2016

Replacing GB/T 12145-2008

Quality criterion of water and steam for power plant and steam-generating equipment

火力发电机组及蒸汽动力设备水汽质量

GB/T 12145-2016 How to BUY & immediately GET a full-copy of this standard?

1. www.ChineseStandard.net;
2. Search --> Add to Cart --> Checkout (3-steps);
3. No action is required - Full-copy of this standard will be automatically & immediately delivered to your EMAIL address in 0~25 minutes.
4. Support: Sales@ChineseStandard.net. Wayne, Sales manager

Issued on: February 24, 2016

Implemented on: September 01, 2016

Issued by: General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China;

Standardization Administration of the PRC.

Table of contents

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Steam quality criterion	6
5 Boiler feed water quality criterion	7
6 Condensate quality criterion	9
7 Boiler water quality criterion	10
8 Boiler makeup water quality criterion.....	11
9 Temperature reduction water quality criterion	11
10 Dewatering and production backwater quality criterion	11
11 Closed recirculating cooling water quality criterion.....	12
12 Heating network makeup water quality criterion	13
13 Cooling water quality criterion for internal water-cooled generators	13
14 Water and steam quality criterion of shutdown/standby unit at startup...	13
15 Water and steam quality degradation treatment.....	15

Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 12145-2008 “Quality criterion of water and steam for power plant and steam-generating equipment”.

As compared with GB/T 12145-2008, the main technical changes, except the editorial modification, are as follows:

- MODIFY terms and definitions;
- MODIFY steam quality indicators;
- MODIFY boiler feed water quality indicators;
- MODIFY condensate quality indicators;
- MODIFY boiler water quality indicators;
- MODIFY makeup water quality indicators;
- MODIFY quality criterion of dewatering and production backwater;
- MODIFY cooling water quality indicators for water-cooled generators.

This standard was proposed by AND shall be under the jurisdiction of the China Electricity Council.

The drafting organizations of this standard: Xi'an Thermal Power Research Institute Co., Ltd., State Grid Henan Electric Power Company Electric Power Research Institute.

The main drafters of this standard: Cao Jieyu, Sun Benda, Ke Yujin, Wu Wenlong.

This Standard replaces the standard previously issued as follows:

- GB/T 12145-1989, GB/T 12145-1999, GB/T 12145-2008.

Quality criterion of water and steam for power plant and steam-generating equipment

1 Scope

This standard specifies the water and steam quality for power plant and steam-generating equipment in the normal operation and startup of the shutdown (standby) unit.

This standard applies to the power plant and steam-generating equipment for which the boiler main steam pressure is not less than 3.8 MPa (gauge pressure).

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this Standard.

DL/T 1358-2014 Analytical methods of steam and water in power plants - Determination of total organic carbon

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Cation Conductivity

It refers to the conductivity of the water sample as measured after subjected to the hydrogen-type strong acid cation exchange resin treatment.

3.2

Feed water system without copper alloys

It refers to the feed water system for which the components and equipment in contact with water and steam (excluding condensers) do not contain copper or copper alloy materials.

3.3

Feed water system with copper alloys

It refers to the feed water system for which the components and equipment in contact with water and steam (excluding condensers) contain copper or copper alloy materials.

3.4

All volatile treatment (reduction); AVT (R)

It refers to the treatment of boiler feed water by adding ammonia and hydrazine.

3.5

All volatile treatment (oxidization); AVT (O)

It refers to the treatment of boiler feed water by adding only ammonia.

3.6

Oxygenated treatment; OT

It refers to the treatment of boiler feed water by adding oxygen.

3.7

Solid alkalizing agents

It refers to such agents as phosphate and sodium hydroxide which are used to treat the boiler water.

3.8

Alkalizing of boiler water with solid alkalizing agents

It refers to the treatment of boiler water by adding phosphate or sodium hydroxide.

3.9

Alkalizing of the boiler water without solid alkalizing agents

It refers to the treatment of feed water by adding volatile alkali AND boiler water without adding solid alkalizing agents.

14.5 When the unit is started, it shall monitor the dewatering quality. When the dewatering is recovered in the deaerator, it shall ensure that the feed water quality complies with the requirements of Table 17; as for the unit with condensate treatment device, when the iron content of dewatering does not exceed 1000 µg/L, it can be recovered in the condenser.

15 Water and steam quality degradation treatment

15.1 When the quality of water and steam degrades, it shall quickly check the sampling representativeness and analytical result accuracy, comprehensively analyze the water and steam quality change in the system, confirm that the judgment is errorless, AND follow the 3-stage treatment requirements as below:

- Primary treatment - If there is the possibility of corrosion, fouling and salt accumulation of the water and steam system, it shall restore to the corresponding standard value within 72 h;
- Secondary treatment - If the corrosion, fouling and salt accumulation of the water and steam system is in occurrence, it shall restore to the corresponding standard value within 24 h;
- Third-stage treatment - If fast corrosion, fouling and salt accumulation is in occurrence, AND the water quality does not improve within 4 h, it shall shut down the boiler.

At each stage of the abnormality handling, if it cannot be restored to normal state within the specified time, it shall adopt the higher level treatment method.

15.2 The treatment of condensate (condensate pump outlet) quality abnormality shall be conducted in accordance with Table 19.

Table 19 Treatment of abnormal water quality of condensate

Item		Standard value	Treatment level		
			Primary	Secondary	Third-stage
Cation conductivity (25 °C) µS/cm	With fine treatment desalination	≤0.30 ^a	>0.30 ^a	-	-
	Without fine treatment desalination	≤0.30	>0.30	>0.40	>0.65
Sodium ^b µg/L	With fine treatment desalination	≤10	>10	-	-
	Without fine treatment desalination	≤5	>5	>10	>20

This is an excerpt of the PDF (Some pages are marked off intentionally)

Full-copy PDF can be purchased from 1 of 2 websites:

1. <https://www.ChineseStandard.us>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Select your country (currency), for example: USA (USD); Germany (Euro).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Tax invoice can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with download links).

2. <https://www.ChineseStandard.net>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Add to cart. Only accept USD (other currencies - <https://www.ChineseStandard.us>).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with PDFs attached, invoice and download links).

Translated by: Field Test Asia Pte. Ltd. (Incorporated & taxed in Singapore. Tax ID: 201302277C)

About Us (Goodwill, Policies, Fair Trading...): <https://www.chinesestandard.net/AboutUs.aspx>

Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

----- The End -----