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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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

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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

GB/T 12145-2016 is the Chinese national standard on quality criterion of water and steam for power plant and steam-generating equipment, in the field of energy and heat transfer engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 24 February 2016 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 September 2016. Classification: ICS 27.060.30, CCS J98. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

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.

3.4 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.

4 Steam quality criterion

The main steam quality of the steam drum boiler and the direct current boiler shall comply with the provisions of Table 1.

5 Boiler feed water quality criterion

5.1 The quality of feed water shall comply with the requirements in Table 2.

5.2 When the feed water is subjected to all volatile treatment, the feed water regulating indicators shall comply with the provisions of Table 3.

6 Condensate quality criterion

6.1 Condensate water quality shall comply with the provisions of Table 5. Table

7 Boiler water quality criterion

As for the steam drum boiler water, its conductivity, cation conductivity, silica and chloride ion content shall be determined based on the specific water and steam quality tests OR otherwise controlled in accordance with Table 7;

8 Boiler makeup water quality criterion

The quality of the boiler makeup water shall ensure that the feed water quality reaches to standards AND can be controlled in accordance with Table 9.