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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 14416-2023

Replacing GB/T 14416-2010

Methods for sampling boiler steam

锅炉蒸汽的采样方法

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Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents" drafting: This document replaces GB/T 14416-2010 "Sampling Method for Boiler Steam": Compared with GB/T 14416-2010, except for structural adjustment In addition to editorial changes, the main technical changes are as follows:

a) Added and modified terms and definitions (see Chapter 3, Chapter 3 of the:2010 edition);

b) Changed the method outline (see Chapter 4, Chapter 4 of the:2010 edition);

c) changed the sampler (see Chapter 5, Chapter 5 of the:2010 edition);

d) Changed the sample delivery pipeline (see Chapter 6, Chapter 5 of the:2010 edition);

e) Changed the cooler (see Chapter 7, Chapter 5 of the:2010 edition);

f) Delete reagents and materials, selection and handling of sample containers, collection of vapor samples, sampling volume, sample labeling, sample storage and transportation Lose (see Chapter 6 and Chapter 7 of the:2010 edition): Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents: This document is proposed and managed by China Electricity Council: This document is drafted by: Xi'an Thermal Engineering Research Institute Co:, Ltd:, Rundian Energy Science and Technology Co:, Ltd:, Huaneng Wuhan Power Generation Co:, Ltd: company: The main drafters of this document: Liu Wei, Long Guojun, Huang Qian, Pan Jun, Zhang Weike, Wu Wenlong, Zhang Xiaoni, Liu Kai, Zeng Zhong, Tian Liu, Wu Lei, Zhong Jie, Cao Jieyu, Tian Li, Xue Changgang, Xiong Weijun: This document was first released in:1993, revised for the first time in:2001, and this is the second revision: Sampling method of boiler steam

1 Scope

GB/T 14416-2023 is the Chinese national standard on methods for sampling boiler steam, 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 23 May 2023 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 December 2023. Classification: ICS 27.100, CCS F24. 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 document specifies the requirements and methods for the collection, transportation and cooling of samples for steam quality determination: This document is applicable to the collection of steam samples of power plant boilers and industrial boilers: Other steam pipeline sampling can refer to this document:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to this document:

GB/T 14976 Stainless Steel Seamless Steel Tubes for Fluid Transmission DL/T 665 Acceptance Guidelines for Water Vapor Centralized Sampling and Analysis Devices DL/T 752 Thermal Power Plant Dissimilar Steel Welding Technical Regulations DL/T 869 Thermal Power Plant Welding Technical Regulations

3 Terms and Definitions

The following terms and definitions apply to this document: 3:

1 Isokinetic sampling isokineticsampling Sampling technique in which the steam sample enters the inlet of the sampler in exactly the same way as the flow rate and direction of the steam in the pipeline:

4 Principles

This method describes the equipment, design principles, and procedures for collecting and delivering samples of saturated steam, superheated steam, and reheated steam, including

The selection and application of the sampling device, the size of the delivery pipe, the condensation requirements and the optimal flow rate make the steam sampling and delivery process representative and able to Accurately reflect impurities such as dissolved chemical substances in steam, solid particles, and chemical substances adsorbed on solid particles: Sampling systems include specially designed, manufactured and installed equipment such as samplers, transfer lines and coolers:

5 Sample collection

1 Isokinetic sampling should be used for steam collection (see Appendix A), so that the sample is representative, and the following should be noted:

a) The sampling system shall be designed according to the condition of equal velocity sampling under the condition of full load of the unit: In order to achieve the effect of isokinetic sampling, the The sample flow rate should be adjusted accordingly according to the steam flow rate:

b) In order to prevent the moisture in the saturated steam from forming a water film containing impurities on the inner surface of the tube and entering the sampling tube, the sampling port should be installed in the away from the pipe wall:

c) For the steam sampling system, the isokinetic sampler should be designed first, and then the isolation valve and sampling pipe from the sampler to the primary cooler should be designed and determined: The design flow rate of the isokinetic sampler should meet the requirements of online chemical instruments and manual sampling at the same time, preferably 1000mL/min~ 1200mL/min: