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

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**Specification of performance test for ammonia flue gas
desulfurization
(English Translation)**

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Foreword

This standard is in accordance with the rules given in GB/T 1.1-2009 "Guidelines for Standardization Work Part 1: Standard Structure and Compilation" Then drafted.

Certain contents of this standard may involve patents. The issuing organization of this standard does not bear the responsibility for identifying these patents.

This standard was proposed by the China Electricity Council.

This standard is under the jurisdiction of the Power Plant Boiler Standardization Technical Committee (DL/T C 08).

Drafting organizations of this standard. Xi'an Thermal Power Research Institute Co., Ltd., Jiangsu New Century Jiangnan Environmental Protection Co., Ltd.

1 Scope

This standard specifies the content, time, conditions and methods of the performance acceptance test of ammonia flue gas desulfurization equipment.

This standard applies to ammonia flue gas desulfurization (flue gas desulfurization using liquid ammonia, gas ammonia, water or other amino substances as absorbents) the performance acceptance test of the device can also be used for post-evaluation and other purposes.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version is suitable Used in this document. For undated reference documents, the latest version (including all amendments) is applicable to this standard.

GBZ/T 192.1 Determination of Dust in the Air of Workplace Part 1: Total Dust Concentration
 GB/T 535 Ammonium sulfate GB/T 536 Liquid anhydrous ammonia GB/T 631 chemical reagent ammonia GB/T 3723 General Rules for Sampling Safety of Industrial Chemical Products GB 8978 Integrated Wastewater Discharge Standard GB/T 10184 Specification for performance test of power station boilers GB/T 12348 Environmental Noise Emission Standard at the Boundary of Industrial Enterprises GB/T 16157 Determination of particulate matter in exhaust gas from stationary sources and sampling method and amendment of gaseous pollutants GB/T 18204.2 Hygienic inspection methods for public places Part 2: Chemical pollutants GB/T 21508-2008 Coal-fired flue gas desulfurization equipment performance test method GB/T 23349 Ecological indicators of arsenic, cadmium, lead, chromium and mercury in fertilizers GB/T 32954 Determination of fluoride in fertilizers ion selective electrode method HG/T 2784 Ammonium sulfite for industrial use HG/T 2785 Ammonium Bisulfite for Industrial Use HJ533 Ambient air and exhaust gas ammonia determination-Nessler's reagent spectrophotometric method HJ836 Gravimetric method for determination of low-concentration particulate matter in waste gas from stationary sources HJ.2001 General technical specification for ammonia flue gas desulfurization engineering

3 Terms and definitions

The following terms and definitions apply to this standard.

Ammonia flue gas desulfurization Refers to a wet flue gas desulfurization process that uses amino substances as absorbents to remove SO₂ and other acid gases in flue gas, referred to as ammonia method.

Absorbent

Refers to the reactant used to remove SO₂ and other acid gases in desulfurization projects.

By-product

Refers to the substance produced after the absorbent reacts with SO₂, O₂, etc. in the flue gas.

Free ammonia

Refers to ammonia that exists in gaseous form.

Dissolving ammonium

Refers to the total amount of ammonium salt dissolved in water.

Ammonia slip

Refers to the free ammonia in the unit flue gas volume (101325Pa, 0°C, dry basis, reference oxygen) after desulfurization when the desulfurization device is operating the quality (mg/m³).

Crystallizer tank

Refers to the slurry pool that produces ammonium sulfate crystals or promotes the growth of ammonium sulfate crystals.

Oxidation tank

Refers to the slurry tank that oxidizes ammonium sulfite to ammonium sulfate.

Total solid particles concentration Refers to the total amount of suspended solids and dissolved particulate matter per unit volume of flue gas (101325Pa, 0°C, dry basis, reference oxygen) and, including the soot particles that cannot be completely collected by the dust collector and the secondary organisms produced in the flue gas desulfurization process (mg/m³).

3.10

Recovery rate of ammonia Refers to the ratio of the quality of ammonia in the by-product of desulfurization engineering to the quality of ammonia used for desulfurization. Calculate according to formula (1).

4.1 Test time

The performance acceptance test of the newly-built desulfurization device shall be 2 after the completion of the overall trial operation of the desulfurization device (usually 168 hours).

Months later, at an appropriate time within 6 months. The performance acceptance test of the in-service desulfurization device should be run for half a month after maintenance get on.

4.2 Performance test conditions and test conditions requirements

The performance acceptance test of the desulfurization device shall be carried out in the desulfurization equipment specified in the technical contract signed between the owner and the general contractor.

It should be carried out under the working conditions corresponding to the main performance guarantee value clauses, and should be carried out under the boiler BMCR

working condition or ECR working condition. Sex the acceptance test should last for 3 days or more under the stable operation of the desulfurization device design conditions.

During the performance acceptance test, the flue gas volume, temperature, soot content, SO₂ concentration and other parameters at the inlet of the desulfurization device should be adjusted to design conditions, the smoke and smoke composition should be within the design range to meet the design requirements.

4.3 The steady state of the desulfurization device performance acceptance test If the desulfurization device is equipped with a bypass flue, the bypass baffle should be in a completely closed state. During the performance acceptance test, the boiler and desulfurization device should operate stably, and the boiler load fluctuation of each test condition should not exceed 5%. The operation parameters of the desulfurization device the number should not change much.

4.4 Requirements for fuel, absorbent and process water

During the performance acceptance test, the coal quality, absorbent and process water quality shall meet the design requirements.

4.5 Confirmation of the operation status of the desulfurization unit

Before the performance acceptance test starts, the general contractor shall confirm the operation status of the desulfurization device and contact the equipment supplier for Calibration of online instruments such as the continuous flue gas emission monitoring system (CEMS), and proposes the main operation of the desulfurization device during the test the method and parameter requirements are confirmed by all parties involved in the performance acceptance test.

4.6 Revision of performance test results

Before the performance acceptance test begins, the general contractor shall provide the relevant correction curve and confirm it jointly by all parties involved in the performance acceptance test.

recognize. When the performance acceptance test conditions deviate from the design conditions, the confirmed correction curve should be used to adjust the test results in an appropriate range Make corrections within.

5 Test content

5.1

The test items that should be done for the performance acceptance test of ammonia flue gas desulfurization device shall have at least the following contents