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

DL/T 986-2016

Replacing DL/T 986-2005

**Technical specification for performance test of wet flue gas
desulphurization**

湿法烟气脱硫工艺性能检测技术规范

(English Translation)

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Foreword

This standard has been drafted in accordance with the rules given in GB/T 1.1-2009 "Directives for standardization - Part 1: Structure and drafting of standards".

This standard is a revision of DL/T 986-2005 "Technical code for performance test of wet flue gas desulfurization process". Compared with DL/T 986-2005, the main modifications in this revision are as follows:

- clauses on test conditions have been added;
- the specific indicators in the test content part have been updated;
- the clauses on functional indicators have been deleted;
- the relevant clauses on flue gas composition testing have been updated;
- the clauses on the oxidation test of circulating desulfurization slurry have been deleted;
- clauses on the testing of flue gas mist droplets at the mist eliminator outlet have been added;
- the clauses on energy consumption testing have been updated;
- the relevant clauses on noise testing have been added;
- the clauses on the environmental condition evaluation system have been deleted;
- the clauses on the evaluation of test results have been deleted;

-- the clauses on the testing organization have been deleted;

-- the informative annexes on the testing system, the testing organization and the testing procedure have been deleted.

This standard was proposed by the China Electricity Council.

This standard is under the jurisdiction of the Standardization Technical Committee on Environmental Protection of the Electric Power Industry.

Drafting organizations of this standard: Guodian Environmental Protection Research Institute, Datang Technology Industry Group Co., Ltd., Zheneng Technology Research Institute Co., Ltd.

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This standard supersedes DL/T 986-2005 from the date of its implementation.

Comments or suggestions arising during the implementation of this standard should be fed back to the Standardization Management Center of the China Electricity Council (No. 1, Baiguang Road Ertiao, Beijing, 100761).

1 Scope

This standard specifies the content, procedures and methods for performance testing of wet flue gas desulfurization processes.

This standard is applicable to the performance testing of limestone-gypsum wet flue gas desulfurization processes; other wet flue gas desulfurization processes and other similar desulfurization processes may also be carried out with reference to this standard.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the edition cited applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 5484 Methods for chemical analysis of gypsum · GB/T 5762 Methods for chemical analysis of limestone, quicklime and hydrated lime for building materials · GB/T 6904 Determination of pH in industrial circulating cooling water and boiler water · GB/T 7484 Water quality-Determination of fluoride-Ion selective electrode method · GB 8978 Integrated wastewater discharge standard · GB/T 14415 Determination of solid matter in industrial circulating cooling water and boiler water · GB/T 15453 Determination of chloride ion in industrial circulating cooling water and boiler water · GB/T 16157 The determination of particulates and sampling methods of gaseous pollutants emitted from exhaust gas of

stationary source · GB 50122 Code for measurement of noise in industrial enterprises · DL/T 323 Method for determination of the activity of quicklime used in dry flue gas desulfurization · DL/T 943 Determination of the reaction rate of limestone powder used in wet flue gas desulfurization · DL/T 997 Water quality control indices for limestone-gypsum wet desulfurization wastewater of thermal power plants · JC/T 478.2 Test methods of building lime · JC/T 2074 Flue gas desulfurization gypsum

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1 desulfurization efficiency

The ratio of the quantity of SO₂ removed by the flue gas desulfurization facility per unit time to the quantity of SO₂ in the flue gas entering the desulfurization facility.

3.2 sulfur dioxide effluent-quality concentration

After SO₂ has been removed from the flue gas by the desulfurization facility, the actually measured volumetric discharge concentration of SO₂ converted into the mass concentration of SO₂ under the standard state of dry flue gas (101.3 kPa, 273.15 K, zero humidity) and at an oxygen content of 6%.

3.3 calcium-sulfur stoichiometric proportion

The ratio of the number of moles of calcium-based absorbent fed into the desulfurization facility to the number of moles of SO₂ removed by the desulfurization facility; it also indicates the degree of excess of desulfurization absorbent required for the desulfurization facility to attain a given desulfurization efficiency.

3.4 liquid-gas ratio

The ratio of the volumetric flow rate of the slurry sprayed in the absorber to the volumetric flow rate of the wet flue gas at the absorber outlet under standard conditions.

3.5 oxidation rate of the desulfurated accessory substances

The degree to which calcium sulfite in the solid material of the desulfurization by-product is oxidized into calcium sulfate, which refers to the ratio of the number of moles of sulfate ions in the solid material of the desulfurization by-product to the sum of the numbers of moles of sulfate ions and sulfite ions.

3.6 moisture content of the desulfurated accessory substances

The mass fraction of water in the solid material of the desulfurization by-product, excluding the water of crystallization in the solid material.

3.7 dripping content of the demister outlet gas

The mass concentration of the slurry carried in the flue gas at the demister outlet.

3.8 limestone dissolution rate

The reaction rate between the carbonate in limestone and acid.