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**Cellular wet electrostatic precipitator
(English Translation)**

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Foreword

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

Please note that certain contents of this document may involve patents. The issuing agency of this document is not responsible 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 C08).

Drafting organizations of this standard. Xi'an Thermal Power Research Institute Co., Ltd., Jiangsu Xutang Power Generation Co., Ltd.

1 Scope

This standard specifies the technical requirements to be followed during the application of the honeycomb structure wet electric dust collector (mist).

This standard applies to coal-fired power plants.

2 Normative references

The following documents are indispensable for the application of this standard. For dated reference documents, only the dated version applies to this standard.

For undated reference documents, the latest version (including all amendments) is applicable to this standard.

GB/T 191 Packaging, storage and transportation pictorial signs GB/T 3797 electrical control equipment GB 4053 Safety requirements for fixed steel ladders and platforms GB/T 6388 Receipt and Delivery Marks for Transport Packaging GB 7251 Low-voltage switchgear GB/T 13306 signs GB/T 13384 General technical conditions for packaging of mechanical and electrical products GB/T 13931 Electrostatic precipitator performance measurement method GB/T 16157 Determination of particulate matter in exhaust from stationary sources and sampling method of gaseous pollutants GB/T 21508 Performance test method for coal-fired flue gas desulfurization equipment GB 50009 Building structure load code GB 50017 Steel Structure Design Code GB 50054 Low Voltage Power Distribution Design Code GB 50217 Power Engineering Cable Design Code DL/T 461 Operation and maintenance guidelines for electric precipitators in coal-fired power plants DL/T 514 Electric precipitator for coal-fired power plant DL/T 1520 Technical Specification for Testing Fine Particulate Matter (PM_{2.5}) in Flue Gas of Thermal Power Plant Gravimetric Method DL/T 1844 Inspection specification for conductive glass fiber reinforced plastic anodes for wet electrostatic precipitator DL/T 5153 Technical specification for auxiliary power design of thermal power plant DL/T 5390 Technical Regulations for Lighting Design of Thermal Power Plants and Substations JB/T 5908 Specification for sampling inspection, packaging, transportation and storage of main parts of electrostatic precipitator JB/T 5913 Electrostatic precipitator cathode line JB/T 11074 Constant current high voltage DC power supply for electric dust removal HJ/T 48 Technical requirements for soot sampler HJ836 Gravimetric method for determination of low-concentration particulate matter in waste gas from stationary sources HG/T 2640 glass flake lining construction technical conditions

3 Terms and definitions

The following terms and definitions apply to this standard.

Honeycomb structure wet electrostatic precipitator (fog) cellular wet electrostatic precipitator the dust collector is arranged vertically in a honeycomb structure. It is applied to the working conditions of saturated wet flue gas after wet desulfurization, and the electric dust collector (mist) of the hydraulic dust removal method is adopted.

Dust collecting pole the system unit that collects the charged dust and liquid droplets in the flue gas, also called the anode.

Discharge electrode

The system unit that charges dust and liquid droplets in the flue gas, also called the cathode.

Spray rinse device

The unit used to clean the dust collector and discharge electrode, including cleaning water pumps, pipelines, valves, filters, nozzles and other equipment.

Sewer system

The unit used to collect and remove the gray-water mixture collected by the equipment, including sewage collection hoppers, pipelines, valves and other equipment.

4.1 Product Classification

4.1.1

According to the layout, it can be divided into one-piece type and split type.

4.1.2

Integrated type refers to the arrangement in which the equipment is arranged on the upper part of the demister of the desulfurization absorption tower and integrated with the absorption tower.

4.1.3

Split type refers to the arrangement where the equipment is arranged outside the desulfurization absorption tower to form an independent device.

4.2 Structure composition

4.2.1

The wet electric dust collector (fog) is composed of mechanical equipment and electric control system.

4.2.2

Mechanical equipment includes shell, dust collector, discharge electrode, cleaning system, sewage system, hot air heating system and flow field distribution device.

4.2.3

The electrical control system includes electrical systems, control systems and measuring instruments.

5 Main technical parameters

5.1

The amount of flue gas (m³/h)

6.1 General requirements

6.1.1

The layout method should be determined according to the site conditions, and the selection and design parameters refer to Appendix A.

6.1.2

The power supply area shall operate independently in different areas. 300MW units should be divided into 4 power supply areas, 600MW units should be divided into 4-6 power supply areas, the 1000MW unit should be divided into 6-8 power supply areas.

6.1.3

The dust collector is arranged vertically in a honeycomb structure, and the discharge electrode should adopt an integral suspended structure.

6.1.4

The equipment should be equipped with a cleaning system, a sewage system and a heating system.

6.1.5

The dust collector, discharge electrode and accessories should be made of corrosion-resistant materials according to the flue gas conditions.

6.1.6

Equipment manholes, valves, instruments and other frequently operated parts should be equipped with maintenance platforms, and the design of platform escalators should meet the requirements of GB 4053.

6.1.7

A lifting device should be provided on the top of the shell.

6.1.8

Manhole doors should be equipped with safety interlocking devices.

6.1.9

The equipment is equipped with a safe and reliable power supply and control system.

6.2.1 Shell