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PEOPLE'S REPUBLIC OF CHINA**

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**Engineering technical specification of flue gas ive catalytic
reduction denitrification for thermal power plant
(English Translation)**

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Foreword

To implement the Environmental Protection Law of the People's Republic of China, the Law of the People's Republic of China on Prevention and Control of Atmospheric Pollution, and the Air Pollution of Thermal Power Plants Dust emission standards, regulate the construction of flue gas denitrification projects in thermal power plants, improve the quality of the atmospheric environment, and develop this standard.

This standard stipulates the technical requirements for the design, construction, acceptance, operation and maintenance of the flue gas denitrification project in the selective catalytic reduction of thermal power plants.

begging.

This standard was formulated by the Science and Technology Standards Department of the Ministry of Environmental Protection.

This standard is the first release.

This standard is mainly drafted by. China Environmental Protection Industry Association, Southeast University, Beijing Municipal Environmental Protection Research Institute, Xi'an Thermal Power Research Institute Co., Ltd., State Grid Power Technology Company, Beijing Boqi Power Technology Co., Ltd., Beijing Guodian Longyuan Environmental Protection Engineering Co., Ltd.

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This standard was approved by the Ministry of Environmental Protection on February 3, 2010.

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This standard is explained by the Ministry of Environmental Protection.

Technical specification for flue gas denitration engineering of thermal power plants
Selective catalytic reduction

1 Scope of application

This standard stipulates the design, construction, acceptance, operation and maintenance of the flue gas denitrification project of thermal power plant selective catalytic reduction.

Technical requirements, can be used as environmental impact assessment, engineering design and construction, project completion environmental protection acceptance and operation and management after completion in accordance with.

This standard is applicable to smoke from coal-fired, gas-fired, and oil-fired boilers with a capacity of 200 MW or above.

Gas denitration project. Coal, gas, oil-fired boilers and other industrial boilers and furnaces with unit capacity below 200 MW when building a boiler flue gas denitration project, it can be referred to.

2 Normative references

The contents of this standard refer to the terms in the following documents. For undated references, the valid version applies to this standard.

GB 150 steel pressure vessel GB 536 liquid anhydrous ammonia GB 2440 urea GB 12348 industrial enterprise boundary noise emission standard General rules for safety and health requirements of GB 12801 production process GB 14554 Odor Pollutant Discharge Standard GB 18218 Identification of major hazard sources of hazardous chemicals GB 50016 Building Design Fire Code GB 50040 power machine basic design specification GB 50160 Petrochemical Enterprise Design Fire Protection Code GB 50222 Building interior decoration design fire protection specification GB 50229 Fire power plant and substation design fire protection specification GB 50351 Tank design fire protection design code GB J 87 Industrial Enterprise Noise Control Design Specification GB/T 16157 Determination of particulate matter in fixed pollution source exhaust gas and sampling method of gaseous pollutants GB/T 20801 Pressure Pipeline Specification Industrial Pipeline GB/T 21509 coal-fired flue gas denitration technology equipment GBZ 1 industrial enterprise design hygiene standard DL 5009.1 Safety Practice for Power Construction (Part of Thermal Power Plant) DL 5053 Labor Safety and Industrial Hygiene Design Regulations for Thermal Power Plants DL/T 5032 Technical specification for general plan transportation design of thermal power plants DL/T 5121 Technical Specification for Design of Tobacco Pulverized Coal Pipeline for Thermal Power Plant DL/T 5136 Technical specification for secondary wiring design of thermal power plants and substations DL/T 5153 Thermal power plant power consumption design technical regulations HJ/T 75 Technical Specifications for Continuous Monitoring of Flue Gas Emissions from Fixed Sources (Trial) HJ/T 76 Fixed pollution source flue gas emission continuous monitoring system technical requirements and testing methods HG/T 20649 General Specification for Transportation Design of Chemical Enterprises SH 3007 Petrochemical Storage and Transportation System Tank Design Specification Regulations on the Safety Management of Dangerous Chemicals (Order No. 344 of the People's Republic of China) Measures for the Safety Review of Production and Storage Projects of Dangerous Chemicals (State Administration of Work Safety, National Coal Mine Safety Supervision Bureau) no. 17) "Measures for Completion and Acceptance of Construction Projects (Engineering)" (Project Construction [1990] No. 1215) Measures for the Administration of Environmental Protection Acceptance for Completion of Construction Projects (Order No. 13 of the State Environmental Protection Administration)

3 Terms and definitions

The following terms and definitions established by GB/T 21509 apply to this standard.

3.1 Denitrification Island denitrification island

A complete system including construction and control systems for denitration services.

3.2 Denitrification system denitrification system

A system for removing nitrogen oxides (NO_x) from flue gases by physical or chemical means. In this standard, the selective catalytic reduction method is used for denitration.

System.

3.3 Selective catalytic reduction (SCR)

A method in which a reducing agent selectively reacts with NO_x in a flue gas under the action of a catalyst to generate nitrogen gas and water.

3.4 Reductant

A substance and raw material used in a denitration system for reducing reaction with NO_x.

3.5 Ammonia spray grid ammonia injection grid

A device that uniformly sprays a reducing agent into the flue gas.

3.6 Static mixer static mixer

A device for uniformly mixing the reducing agent with the flue gas.

3.7 Ammonia escape mass concentration ammonia slip

The ratio of the mass of ammonia in the flue gas at the outlet of the SCR reactor to the volume of the flue gas (101.325 kPa, 0 ° C, dry basis, excess air ratio 1.4), Generally expressed in mg/m³.

3.8 System availability

The percentage of annual normal operating time of the denitration system to the total annual operating time of the boiler. Calculated according to formula (1).

100% AB

= x availability rate (1) where. A--the total annual running time of the boiler, h;

B--Dehydration system total outage time per year, h.