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

DL 468-1992

Replacing DL/T 468-2004

**Guide on type selection and application for power boiler fans
(English Translation)**

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Foreword

This standard is drafted in accordance with GB/T 1.1-2009 "Guidelines for Standardization Part 1: Standard Structure and Writing Rules".

Please note that 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 replaces DL/T 468-2004 "Guidelines for Selection and Use of Fans for Power Station Boilers". This standard is compared with DL/T 468-2004, except the main technical content changes are as follows.

-Revised Chapter 3 "Terms and Definitions", the definitions of blower and induced draft fan;

-Added Chapter 3 "Terms and Definitions", the definition of the stall safety factor of axial flow fans;

--- Added Chapter 3 "Terms and Definitions", of basic air volume, basic pressure and selection conditions;

-The title of Chapter 4 "Design Requirements for Fans" is revised;

-Deleted Chapter 4 "Design Requirements for Fans", related content about fan manufacturing requirements;

- Revised the title of Chapter 5 "Van Type Selection";
- Added Chapter 5 "Fan Selection", giving out the original data requirements for fan selection;
- Modified Chapter 5 "Fan Selection", the requirements on the selection of fan speed;
- Modified Chapter 5 "Selection of Fans", the requirements on the number of fans selected;
- Modified Chapter 5 "Fan Selection", the requirements on fan adjustment methods;
- Modified Chapter 5 "Fan Selection", the requirements on the stall safety factor of the axial flow fan;
- Deleted Chapter 6 "Installation of Fans" of the original standard;
- The serial number of Chapter 7 of the original standard has been revised to 6, and the serial numbers of subsequent chapters have been extended;
- Modified Chapter 6 "Fan Operation", the requirements for operating parameter control.

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).

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The opinions or suggestions during the implementation of this standard are fed back to the Standardization Management Center of China Electricity Council (No. 2 Baiguang Road, Beijing) One, 100761).

Guidelines for Selection and Use of Fans for Power Station Boilers

1 Scope

This standard specifies the basic requirements for the selection, use, and layout design of fan inlet and outlet ducts for power station boiler fans.

This standard applies to the blower, induced draft fan, primary fan, exhaust fan (pulverized coal fan), flue gas recirculation fan, the booster fan of the flue gas desulfurization device and the sealed fan for the coal mill. Other small fans for boilers such as ignition fan, cooling fan, SCR the dilution fan of the denitration system can be used as reference.

This standard does not apply to oxidation fans of desulfurization systems and high-pressure fluidized fans of circulating fluidized bed boilers.

2 Normative references

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

For undated references, the latest version (including all amendments) applies to this document.

GB/T 1236 Industrial ventilators use standardized ducts for performance testing (IDT ISO 5801.:1997) GB/T 2888 Noise measurement method for fans and Roots blowers GB/T 3235 Ventilator basic type, size parameter and performance curve GB/T 3947 Acoustic terms GB/T 10178 Field Performance Test of Industrial Ventilator (IDT ISO 5802:2001) GB/T 17774 Industrial Ventilator Dimensions GB/T 19075 Industrial Ventilator Vocabulary and Type Definition GB 50660 Design Code for Large and Medium-sized Thermal Power Plants DL/T 469 Field Performance Test of Power Station Boiler Fan DL/T 5121 Technical specification for design of smoke, wind and pulverized coal pipelines in thermal power plants DL/T 5145 Technical Regulations for Design and Calculation of Pulverizing System in Thermal Power Plants DL 5190.2 Technical Code for Power Construction Construction Part 2: Boiler Unit JB/T 4358 Centrifugal fan for power station boiler JB/T 4362 Axial fan for power station JB/T 6891 Technical conditions of muffler for fan JB/T 8689 Ventilator vibration detection and its limits JB/T 8690 Noise limit of industrial fans Technical conditions of JB/T 8822 high temperature centrifugal fan

3 Terms and definitions

The following terms and definitions apply to this document.

A fan that supplies the air required for the fuel combustion of the boiler. Arranged before the boiler air preheater. Send air sucked from the atmosphere into the air the preheater, after being heated to the design temperature, is used as the secondary air of the boiler for the direct-blowing pulverizing system and is directly sent into the boiler furnace through the burner;

For the silo-type pulverizing system, part of it is used as the secondary air of the boiler, which is directly sent to the boiler furnace through the burner, and the other part enters the pulverized coal the preparation system is used as a desiccant, and then, or used as primary air to transport pulverized coal into the furnace through the burner (exhausted gas powder delivery system), or as a third the air is sent into the furnace through the burner (hot air powder feeding system). Large-scale boiler adopts medium-speed coal mill or double-inlet and double-outlet steel ball coal mill with positive pressure direct blowing system the powder system is equipped with a high-pressure cooling primary fan. If the primary fan draws air from the outlet of the blower, the blower supplies the total air required by the boiler There are also those designed to inhale air from the atmosphere. At this time,

the blower only supplies the secondary air of the boiler, also known as the secondary fan.

Induced draft fan (IDF) Installed after the boiler dust collector, the boiler combustion products (flue gas) are sucked out from the tail of the boiler and sent into the denitrification system and dust removal system the booster fan of the desulfurization system is a fan that is discharged into the atmosphere from the chimney through the desulfurization system after the pressure is increased, also called a suction fan. If there is no booster fan, the resistance of the entire flue gas system from the boiler furnace to the chimney outlet is overcome by the induced draft fan (commonly known as the two-in-one induced draft fan).

Primary fan (PF)

A fan that supplies the primary air required for the fuel combustion of the boiler. According to its installation position in the system, there are cold primary fans and hot primary fans.

Cold primary fan

Installed before the boiler air preheater, the air sucked from the atmosphere or the cold air duct at the outlet of the blower is heated by the air preheater and then sent to the primary fan of the pulverizing system.

Hot primary fan

Installed after the boiler air preheater, the hot air heated by the boiler air preheater is sent to the direct blowing pulverizing system or only the primary fan that sends pulverized coal into the boiler.

Powder exhaust fan the fan used in the pulverized coal preparation system to transport desiccant and pulverized coal. Mainly used in the intermediate storage bin type powder system, installed in the fine powder After the device. Also known as pulverized coal fan.

Flue-gas recirculating fan Take a part of the flue gas from the front of the air preheater after the economizer, the lower part of the furnace, after the electric dust removal, the outlet of the induced draft fan, etc., and transport it into the pot Furnace cold ash hopper or upper part of the furnace, used to adjust the boiler steam temperature; or sent to the inlet of the coal mill to adjust the temperature or oxygen content of the fan.

Flue gas desulfurization booster fan (FGDP fan or BUF) DL/T 468-2018 A fan installed behind the induced draft fan to overcome the resistance of the flue gas desulfurization system.

Seal air fan

Fans that supply air for sealing in medium-speed coal mills, double-inlet and double-outlet steel ball coal mills and coal feeders. The sealed fan can be directly from the atmosphere Inhale air, or from the outlet duct of the blower or primary fan.