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

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**Technical conditions of power energy substitution equipment
access to power grid -- Part 3: Distributed power heating
equipment**

电能替代设备接入电网技术条件 第3部分：分散电采暖设备 清晰版
(English Translation)

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Foreword

--Part 1: General rules;

--Part 2: Electric boiler;

--Part 3: Distributed electric heating equipment.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

Please note that certain contents of this standard may involve patents, and the issuing organization of this document does not bear the responsibility for identifying these patents.

This part was proposed by the China Electricity Council.

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Energy Technology Co., Ltd., State Grid Hebei Electric Power Co., Ltd.

Company, State Grid Jiangxi Electric Power Co., Ltd., Beijing No. 3 Construction Engineering Co., Ltd., Yantai Oriental Weston Electric Co., Ltd.

1 Scope

This part specifies the basic requirements for distributed electric heating equipment, technical requirements for access to the grid, protection requirements, metering requirements, power quality Requirement for quantity, electromagnetic compatibility, information interaction with power grid, and inspection rules.

This section applies to the installation, testing, operation, and acceptance of 220V/380V voltage level distributed electric heating equipment connected to the power grid.

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

GB/T 12326 Power quality voltage fluctuation and flicker GB/T 14549 Power quality public grid harmonics GB/T 15543 Three-phase voltage unbalance degree of power quality GB/T 22239 Information Security Technology Information System Security Level Protection Basic Requirements GB 50054 Low Voltage Power Distribution Design Code GB 50217 Cable Engineering Cable Design Code GB 50303 Code for Construction Quality Acceptance of Building Electrical Engineering DL/T 448 Technical Management Regulations for Electric Energy Metering Devices DL/T ****.1-20** Technical conditions for connecting electric energy substitute equipment to the power grid. Part 1: General rules

3 Definition of terms

The following terms and definitions apply to this document.

Decentralized electric heating equipment Heating equipment that uses electricity as an energy source and the heat source is indoors and can be flexibly controlled. According to the need for construction, it can be divided into plug and play Type, system laying type; according to the type of equipment heating, it is divided into. direct heat, heat pump, heat storage type.

Plug and play type electric heating equipment the equipment comes with a power cord and plug, which can be used directly after connecting to the power supply. Mainly refers to the appearance of radiator, screen, heating Fans and other forms, you can directly purchase finished products, and meet the plug-and-play characteristics of small indoor electric heating equipment.

System laying electric heating equipment system laying electric heating equipment After installation and laying, electric heating equipment mainly refers to heating cables, electric heating films, carbon crystals and other household floor heating types that need to be constructed and laid.

Or wall-heating electric heating equipment, and electric heating equipment that uses fluid as a working substance to heat through radiators or buried pipes.

4 Basic regulations

Dispersed electric heating equipment is divided into plug and play type and system laying type according to whether it needs to be constructed or not. The specific classification is shown in Table 1.

5.1 General requirements for access to the grid

The general requirements for access to the grid are as follows.

- a) The decentralized electric heating equipment connected to the power grid should meet the requirements of the current relevant standards for each equipment;
- b) Distributed electric heating equipment connected to the power grid should have corresponding safety measures, which should not affect the safe operation of the power grid;
- c) When equipment is connected to the power grid, full consideration shall be given to the power supply capacity of the access point to ensure the safety of the power grid and the power supply of the equipment.

5.2 Voltage level

The access voltage of distributed electric heating equipment is 220V or 380V.

5.3 Access method

Access method requirements.

- a) When the equipment capacity is not greater than 4kVA, plug and play should be adopted to connect to the grid;
- b) When the equipment capacity is greater than 4kVA and less than the remaining indoor power capacity, it should be connected to the indoor low-voltage distribution box;
- c) When the equipment capacity is greater than the remaining indoor power capacity, additional capacity should be applied for.

5.4 Access to grid lines and equipment

The requirements for access to the power grid are as follows.

- a) Plug-and-play distributed electric heating equipment is directly connected to the indoor line through a plug, and the current carrying capacity of the line involved should not be less than the equipment when the equipment is working normally, the temperature of the cable conductor should meet the requirements of GB 50217;
- b) System laying type distributed electric heating equipment, the cross section of the wire connected to the grid line is selected according to the economic current density, and according to the long-term permit the heating and mechanical strength conditions are checked.

6 Protection requirements

The protection requirements for the lines connected to the grid are as follows.

- a) The protection of the line connected to the power grid should meet the requirements;
- b) The equipment should be equipped with short-circuit protection and leakage protection;
- c) The low-voltage switchgear and protection of the distribution line where the equipment is connected to the power grid shall meet the requirements of GB 50054;
- d) The sockets of distributed electric heating equipment with grounding wires must have grounding holes;
- e) The power distribution construction connected to the power grid should meet the requirements of GB 50303;
- f) The distribution lines connected to the power grid should be laid through pipes. When installing an electric heating circuit on the ground, the line should be laid along the wall, and the pipeline must not pass beyond the equipment installation area. The metal device used for the local equipotential connection of the electric heating circuit should be reliably connected to the protection neutral line of the power distribution system
- g) The metal device used for installation and fixation should be reliably connected to the protection neutral line of the power distribution system.

7 Measurement requirements

The measurement requirements are as follows.

- a) For distributed electric heating equipment with separate power supply, an independent electric energy metering device should be equipped; for non-independent electric energy replacement the equipment should be equipped with an electric energy metering device