



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

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**Code for design of engineering for telecommunication power
supply equipment installation**

通信电源设备安装工程设计规范

(English Translation)

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Table of Contents

- 1 General
- 2 Terms
- 3 Classification of mains and communication bureaus and introduction of external mains
- 4 AC power supply system
 - 4.1 General provisions
 - 4.2 High voltage power distribution system
 - 4.3 Transformer
 - 4.4 Low-voltage power distribution system
 - 4.5 Standby generating sets
- 5.2 Lead-acid battery pack

1 General

1.0.1

This specification is formulated to standardize the installation design of communication power supply equipment and ensure the safety of personnel, equipment and normal operation.

1.0.2

This specification applies to the design of new construction, reconstruction and expansion of communication power equipment installation projects.

1.0.3

The installation design of communication power supply equipment should be based on the premise of ensuring the quality of power supply, considering the convenience of installation, maintenance and use, and should ensure the communication security under special conditions such as natural disasters.

1.0.4

In areas of my country with seismic fortification intensity above 7 degrees (including 7 degrees), the power supply equipment used in the public telecommunication network must meet the seismic fortification requirements.

1.0.5

The short-term construction scale such as project design plan and equipment configuration should be combined with the long-term development plan. At the same time, multiple plans

should be carried out based on factors such as project construction and development forecast, economic effect, equipment life, expansion and reconstruction possibilities, etc. Based on technical and economical comparison, choose the scheme with high reliability, low engineering cost and low maintenance cost.

1.0.6

The design should be realistic, technologically advanced, economically reasonable, safe and applicable. Expansion and reconstruction projects should fully consider the characteristics of the original communication equipment, rationally utilize the original buildings, equipment and equipment, and adopt innovative measures, and should achieve advanced, applicable, and economical goals.

1.0.7

Communication power supply design should adopt energy-saving technology.

1.0.8

The communication office station shall adopt the power environment centralized monitoring and management system.

1.0.9

The design of the installation project of communication power supply equipment shall not only comply with this code, but also comply with the current relevant national standards.

2 Terms

2.0.1

the near future and forward Considering the construction scale of the project, it is necessary to divide the load economically and rationally. 1 to 3 years after the project is completed and put into operation is short-term; 3 to 5 years after the project is completed and put into operation is long-term.

2.0.2 Centralize power supply and de-centralize power supply

Centralized power supply means that there is only one communication power supply center (such as power room, battery room) globally, and all communication equipment is powered by the power supply center.

Distributed power supply refers to setting up multiple communication power supply points globally, and each power supply point provides independent power supply for adjacent communication equipment.

2.0.3 Independent power supply

Refers to a power source that is not affected by the failure or blackout of other power sources in operation. In this specification, it mainly refers to power plants (stations) and substations or switchgears on the ring power network composed of more than two power plants (stations).

2.0.4 Introducing the input power line

Refers to the power supply lines imported in accordance with the following mains power supply methods.

- 1 The cable dedicated line or overhead dedicated line directly introduced from the outlet of the power plant (station) or substation (station).
- 2 Cable lines or overhead lines directly introduced from the power transmission lines of power plants (stations) or substations (stations).
- 3 Cable lines or overhead lines directly introduced from the ring power network.

2.0.5 Clear width

Refers to the horizontal distance between equipment and equipment or between equipment and the largest protruding part of the wall.

2.0.6 Two level low voltage disconnection

The low-voltage secondary cut-off function is a measure taken to ensure the safety of network operation in view of the particularity of the mobile communication transmission network structure, that is, when the battery voltage reaches a certain value in the DC power supply system, when the battery voltage reaches a certain value, it will be automatically cut off. Base station wireless load (first-level cut-off), the storage battery supplies the transmission load first, and when the battery voltage reaches the cut-off voltage, all loads are cut off (second-level cut-off) to protect the battery.

2.0.7 Guaranteed load assured load

Under normal circumstances, it is powered by the mains, and the load that needs to be powered by the backup generator set when the mains fails.

2.0.8 High voltage high voltage

In this specification, high voltage refers to the voltage level of 10kV and above.

3 Classification of mains and communication bureaus and introduction of external mains

3.0.1

According to the power supply conditions in the area where the communication station is located, the way of introducing power supply lines and the operating status, the mains power supply is divided into four categories, and the division conditions should meet the following regulations.

1 Class I mains power supply should be introduced into one power supply line from two stable and reliable independent power sources. The two roads should not have power outages for maintenance at the same time, the average number of power outages per month should not be greater than 1, and the average time for each failure should not be greater than 0.5h. The two incoming power supply lines should be equipped with an automatic input device for the backup mains power supply.

2 The power supply line introduced by the second-class mains power supply may have planned maintenance and power outages. The average number of power outages per month should not exceed 3.5 times, and the average failure time for each failure should not exceed 6 hours. The power supply shall meet the requirements of one of the following conditions.

1) Introduce a power supply line into a stable and reliable ring network composed of more than two independent power sources;

2) A stable and reliable independent power supply or a power supply line is introduced from a stable and reliable transmission line.

3 The three types of mains power supply lead-in power supply lines should be led from one power supply to one power supply line. The power supply line is long and there are many users. The average number of power outages per month should not exceed 4.5 times, and the average failure time per failure should not exceed 8h.

4 The four types of mains power supply shall meet the requirements of one of the following conditions.

1) One power supply leads to one power supply line, and there are frequent power outages day and night, and the power supply is not guaranteed, which cannot meet the requirements of the third type of mains power supply;

2) There are seasonal long-term power outages.

3.0.2

Communication stations should be classified according to their level and importance, and should meet the following requirements.