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**DL**

**ELECTRIC POWER INDUSTRY STANDARD OF THE  
PEOPLES REPUBLIC OF CHINA**

**中华人民共和国电力行业标准**

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DL/T 5056-2007

Replacing DL/T 5056-1996

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**Technical code of general plan design for substation  
变电站总布置设计技术规程**

Issued on December 03, 2007

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Issued by National Development and Reform Commission

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## Foreword

This Standard is the revision of DL/T5056—1996 based on the arrangement in Fa Gai Ban Gong Ye [2004] No. 872 “Notice of National Development and Reform Commission General Office on Issuing *004 Industry Standard Project Plan*”.

This revision of DL/T5056—1996 implements basic policies of power construction in China., seriously implements the principle of “safe and reliable, economical and practical, conforming to national conditions”, actively promotes advanced, mature and reliable design technology , pays attention to land saving and adapts to socialist market economy system.

Compared with DL/T5056—1996, this standard is changed as follows.

1. Increasing two chapters of “Scope” and “Normative References” and revising chapter titles.
2. Increasing general layout requirements for transformer substation of 750KV, expanding application scope to total layout design for newly built or expanded substations of voltage class 110KV~750KV.
3. Canceling clauses on substation greening plan, appropriately carrying out greening for station in various projects based on local conditions or adopting coverage protection in other forms to avoid rising of dust and achieve water conservation.
4. Increasing general layout and vertical layout requirements for expansive soil area, collapsible loess area and other common special soil areas.
5. Cancelling and deleting building (structure) and the layout that do not adapt to current transformer substation technology and operation load, e.g. communication building, microwave tower, material spare parts warehouse, overhaul room, garage, administrative office, coal-fired boiler room, courtyard-style layout in the area before station, etc.
6. Building (structure) fire hazard classification and fire resistance rating and fire separation distance between buildings (structures) at substation and equipments conform to existing national standard GB50016 “Code of Design on Building Fire Protection and Prevention” and GB50229 “Code for Design of Fire Protection for Fossil Fuel Power Plants and Substations”.
7. According to actual flood control standard of various places especially cities in our country, this standard revises the provisions that design elevation of 110KV transformer substation site shall be higher than the water level of flood with a frequency of 2% (return period, the same below) or highest waterlogging level in history and that design elevation of 220KV transformer substation site shall be higher than the water level of flood with a frequency of 1% (return period, the same below) or highest waterlogging level in history to the provisions that site design elevation in station area for 220KV key substation and substation of 220KV above shall be higher than flood level with a frequency of 1% (recurrence period, the same below) or the highest waterlogging water level and site design elevation for substations at other voltage classes shall be higher than flood level with a frequency of 2% and the highest waterlogging level in history.

8. Increasing the requirements for clear distance from expansive soil retaining wall and outer wall of building (structure) in expansive soil site section to slope toe supporting and retaining structure.
  9. Allowable value of soil excavation side slope rate and allowable value of rocky excavation side slope are consistent with existing national standard GB50330 “Technical Code for Building Slope Engineering”.
  10. Increasing transformer substation in mountainous and hilly areas. Earth-stone ratio shall be counted and listed when stonework appears during site formation.
  11. Increasing the requirements of collapsible loess area for site formation.
  12. Increasing that cable trench cover plate used may be finished cover plate.
  13. Cancelling the section “overhead pipeline”.
  14. Increasing the provision that expansive soil area, collapsible loess area and other special soil sites.
  15. This revision changes net width of main ring fire lane of transformer substation from 3.5m to 4m according to national standard GB50016 “Code of Design on Building Fire Protection and Prevention”.
  16. Increasing requirements for width of high-voltage transportation road at station and turning radius.
  17. Revising coving protection method for outdoor power distribution unit site.
  18. Cancelling main technical-economic indicator land area within enclosing walls in living quarter, green area in station area, coefficient of land use for greening and the index calculation method.
- This Standard replaces DL/T5056—1996 after implementation.

This Standard is proposed by China Electricity Council Standardization Center.

This Standard is under the jurisdiction of and interpreted by CEPPEA.

Drafting organization of this Standard: Northwest Electric Power Design Institute..

Main drafters of this standard: Zhang Yuming, Wang Yongzi, Lang Xuhai, Dong Ming, Zhao Jie, Lu Jie, Liang Wei, Wang Weijun.

This Standard was issued for the first time on August 26, 1996. This is the first revision. Comments and suggestions arising during implementation of this Standard are fed back to China Electricity Council Standardization Center (No.1 Lane 2, Baiguang Road, Beijing, 100761)

## **1 Scope**

This Standard specifies basic technical requirements for general layout design of transformer substation.

This Standard applies to general layout design of newly built or expanded substations of 110KV~750KV and may be referred to in use for general layout design of 750KV above transformer substation, rebuilt substation or converter station .

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