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GB 50229—2006

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

中华人民共和国国家标准

Code for Design of Fire Protection for Fossil Fuel Power Plants and Substations

火力发电厂与变电站设计防火规范

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Chief Development Department: Ministry of Public Security of the People's Republic of China

China Electricity Council

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Introduction

This version is one of China's enginering construction standards in English series, which, in compliance with the relevant procedures and stipulations, has been organized to translate by China Association for Engineering Construction Standardiation (CECS) authorized by Ministry of Housing and Urban-Rural Development (MOHURD) of the People's Republic of China. On December 4, 2008, MOHURD published it by means of Annoumcement of No. 177.

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Many thanks should go to the staff from the relevant standard development organizations and groups who have provided practical assistance through their hard work.

For the sake of improving its quality, any kind of constructive criticism, comments and suggestions in association with this version is welcome. It would be greatly appreciated if they could be fed back to CECS.

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中华人民共和国住房和城乡建设部标准定额司

Announcement of Ministry of Construction of the People's Republic of China

No. 486

Announcement on Pulishing the National Standard of "Code for Design of Fire Protection for Fossil Fuel Power Plants and Substations"

"Code for Design of Fire Protection for Fossil Fuel Power Plants and Substations" has been approved as a national standard with a serial number of GB 50229—2006, and it shall be implemented from April 1, 2007. The following articles are compulsory rules and must be enforced strictly: 3.0.1, 3.0.9, 3.0.11, 4.0.8, 4.0.11, 5.1.1, 5.1.2, 5.2.1, 5.2.6, 5.3.5, 5.3.12, 6.2.3, 6.3.5, 6.3.13, 6.4.2, 6.6.2, 6.6.5, 6.7.2, 6.7.3, 6.7.4, 6.7.5, 6.7.8, 6.7.9, 6.7.10, 6.7.12, 6.7.13, 7.1.1, 7.1.3, 7.1.4, 7.1.7, 7.1.8, 7.1.9, 7.1.10, 7.1.11, 7.2.2, 7.3.1, 7.3.3, 7.5.3, 7.6.2, 7.6.4, 7.6.5, 7.6.6, 7.10.1, 7.12.4, 7.12.8, 8.1.2, 8.1.5, 8.5.4, 9.1.1, 9.1.2, 9.1.4, 9.1.5, 9.2.1, 9.2.2, 10.1.1, 10.2.1, 10.2.2, 10.3.1, 10.6.1, 10.6.3, 10.6.4, 11.1.1, 11.1.3, 11.1.4, 11.1.7, 11.2.2, 11.4.4, 11.5.1, 11.5.3, 11.5.8, 11.5.9, 11.5.11, 11.5.14, 11.5.17, 11.5.20, 11.5.21, 11.6.1, 11.7.1. "Code for Fire-protection Design Power Plant and Substation" with the serial number of GB 50229—96 is abolished simultaneously.

This code is published and distributed by China Planning Press authorized by Standard Quota Research Institute of Ministry of Construction.

Ministry of Construction of the People's Republic of China

September 26, 2006

Foreword

According to the requirements of Document Jian Biao [2002] No. 85 issued by Ministry of Construction "Notice for Issuing the Formulation and Modification Plan of National Construction Codes of 2001—2002", this code is compiled on the basis of modification for the primary national standard "Code for Fire-protection Design Power Plant and Substation" GB 50229—96 by Northeast Electric Power Design Institute and other organizations.

According to the fundamental policy of the government in capital construction and the working policy of fire protection, "Prevention first and combining prevention with fire fighting", the code is revised on the basis of the fire protection design experiences in power industry, achievements in fire science and technology as well as references to domestic and foreign codes. The code has been reviewed and finalized by some related departments and units based on the comments from some research and design institutes, manufacturers, fire supervision departments as well as some universities.

There are 11 chapters in this code including general, terminology, fire hazard classification, fire resistance rating and fire compartment of coal-fired power plant building and structure, general plane layout of coal-fired power plant, safe evacuation and building structure of coal-fired power plant building (structure), coal-fired power plant procedure system, fire water supply of coal-fired power plant, fire-fighting equipment, automatic fire alarm, heating, ventilating and air conditioning, fire-fighting power supply and lighting, gas turbine power plant and substation.

The main content modified this time is as follows:

1. Regulated code application range, added one Chapter-terminology, harmonized the relation of this code with other related national standards and standards of other related trades.

2. Some contents were modified for perfection including fire hazard classification and its fire resistance rating, fire protection measures for important parts in the main powerhouses; fire performance of building elements of coal transit system; fire protection measures of desulfurization system; safe evacuation from buildings; fire protection requirements for piping and cable passing through fire walls; inner explosion pressure in coalbunker; type selection and laying of fire cable and power cable; type selection, technical parameters and chosen application range of fire-fighting system in different types of buildings; detection and alarm system; smoke control system, evacuation indicator and

emergency lighting system etc. .

3. A chapter for gas turbine power plant was added.

4. Regulated and supplemented the varieties of substation buildings, added the contents about the fire requirements for underground substations, unmanned operation of substation, fire water volume in buildings and automatic fire alarm system.

The clauses printed in bold type are mandatory and must be implemented strictly.

Ministry of Construction is in charge of the management of the code and the explanation of the mandatory clauses. Ministry of Public Security and China Electricity council are in charge of daily management, and Northeast Electric Power Design Institute is in charge of interpretation for technology details. During execution process of this code, all organizations and users shall sum up experiences and collect information from construction practices on the basis of engineering practice and scientific research achievements to preset comments and suggestions to Northeast Electric Power Design Institute. (Address: No. 4368 Renmindajie Changchun, Post code: 130021) as reference for modification in the future.

The Chief Development Organization, Participating Development Organizations, and the Chief Drafting Staffs of this code includes:

Chief Development Organization:

Northeast Electric Power Design Institute

China Electric Power Consultant Group

Participating Development Organizations:

East China Electric Power Design Institute

Tianjin Fire Research Institute

China Power Design Institute

Zhejiang Fire Bureau

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1 General Provisions

1.0.1 This code is formulated with a view to ensure fire safety of fossil fuel power plants and substations, prevention and reduction of fire hazards and safeguarding safety of people's life and property.

1.0.2 This code is applicable to the construction, renovation and extension of the power plants and substations specified as follows:

1 Coal-fired power generation plant with 3～600MW class generator unit (hereafter refers to as "coal-fired power plant");

2 Simple cycling power plant or combined oil-steam cycle power plant with gas turbine of 25～250MW class standard rated output. (hereafter refers to as "gas turbine power plant");

3 Substations with voltage of 35～500kV, substations with single transformer capacity of 5000kV・A and above.

This code is used as reference for coal-fired power plant of over 600MW class unit, gas turbine plant with gas turbine standard rated output under 25MW and over 250MW class and substations over 500kV.

1.0.3 Fire protection design of coal-fired power plant and substation shall adopt actively new technologies, new procedures, new materials and new equipment according to project conditions to realize the purpose of safety and advanced technology and reasonable cost.

1.0.4 Anything excluded in this code shall comply with other relevant current national standards.

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