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Code for design of electric vehicle charging station

电动汽车充电站设计规范

Issued on January 29, 2014 Implemented on October 1, 2014.

Jointly issued by Ministry of Housing and Urban-Rural Development of the People's Republic of China & General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China

Announcement of Ministry of Housing and Urban-Rural Development of the People's Republic of China

No. 325

Announcement of Ministry of Housing and Urban-Rural Construction on Issuing National Standards *Code for Design of Electric Vehicle Charging Station*

Now we approve Code for design of electric vehicle charging station as national standard, the No. is GB50966—2014, it is enforced since October 1st, 2014.Among them, Article 3.2.4, 3.2.5, 11.0.1, and 11.0.4 are mandatory provisions, and must be strictly enforced. The Code is organized by Standard Rating Research Institute of our department and published and distributed by China Planning Press.

Ministry of Housing and Urban-Rural Development of the People's Republic of China

January 29, 2014

Foreword

The Code is in line with the requirements of the *Announcement on Issuing <2010 Code for the Formulation and Revision Plan of the Engineering Construction Standard> (JB (2010) No.43)* issued by the Ministry of Housing and Urban-Rural Development of the People's Republic of China. It was prepared by the State Grid Corporation of China and China Electricity Council as well as the relevant organizations.

During the preparation of the specification, the preparation team conducts in-depth investigation, seriously summarizes the experience of EV charging station in China, draws lessons from the existing standards of related enterprises in China and relevant standards of developed industrial countries abroad, takes advices extensively, discusses for many times, and finally reviews and finalizes.

The Code is divided into 12 chapters and 1 appendixes, which mainly includes the following technical contents: General provisions, terms and symbols, scale and site selection, general plane layout, charging system, power supply and distribution system, power quality, metering, monitoring and communication system, civil engineering, water supply and extinguishing installation for fire-fighting, energy saving and environment protection, etc.

The articles in bold-face marked in the Code are mandatory articles, which shall be performed strictly.

Ministry of Housing and Urban-Rural Development of the People's Republic of China is responsible for the management and interpretation of the mandatory provisions, the China Electricity Council is responsible for daily management, and the State Grid Corporation of China is responsible for the interpretation of the specific technical contents. If the specification needs to be revised and supplemented during the enforcement, please mail the opinions and suggestions to the State Grid Corporation of China (Address: No.86, West Chang'an Road, Xicheng District, Beijing, Zip: for the reference of future revision.

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China Electricity Council

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1 General

1.0.1 In order to make the design of electric vehicle charging stations implement the relevant national policies and guidelines, unify the technical requirements, and to be safe and reliable, technologically advanced and economic reasonable, hereby we prepare this Code.

1.0.2 This specification applies to the design of electric vehicle charging stations using vehicle charging mode.

1.0.3 The design of electric vehicle charging stations shall comply with the following principles:

1 Implementing national laws and regulations, and complying with the requirements of regional and national economy and social development planning.

2 Coordinating with the local regional master plan and the town planning.

3 Complying with the requirements of fire safety, electrical safety and environmental protection.

4 Actively and steadily using new technology, new equipment and new materials to promote technological innovation.

1.0.4 In addition to complying with the Code, the design of the electric vehicle charging stations shall comply with the provisions of existing national standards.

2 Terms and symbols

2.1 Terms

2.1.1 Vehicle charging mode

The manner of directly connecting the electric vehicle to the charging equipment through connection set for charging.

2.1.2 EV charging station

Sites to provide electric energy to electric vehicle using vehicle charging mode shall include the charging equipment for 3 sets and more electric vehicles (at least one off-board charger), related power supply units, monitoring equipment and other support equipment. Hereinafter referred to as charging station.

2.1.3 Charging system

System consists of all charging equipment, cables and related auxiliary equipment within the charging stations.

2.1.4 Charging equipment

Equipment connects to the electric vehicle or power storage battery, and supplies power for them, including on-board charger, off-board charger, AC charging piles and other equipment.

2.1.5 Off-board charger

Special equipment rigidly installed on the ground converting the grid AC power to DC power and charging power to the electric vehicle power storage battery by use of the conduction mode.

2.1.6 AC charging piles

Special equipment using conduction mode to provide AC electric energy for electric vehicles with on-board charger.

2.1.7 Battery management system (BMS)

A system that can control the battery input and output power, monitor battery state (temperature, voltage, state of charge), and provide communication interface for the battery.

2.1.8 Monitoring system of charging station

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