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CHEMICAL INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

HG/T 20514-2014

Replacing HG/T 20514-2000

Design code for tracing and insulation of instrument and impulse line

仪表及管线伴热和绝热保温设计规范

(English Translation)

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Foreword

This code was revised by the National Technical Center for Automatic Control Design of the Chemical Industry, under the commission of the China Petroleum and Chemical Engineering Survey and Design Association, in accordance with the requirements of the Notice on Printing and Distributing the First Batch of Industry Standard Formulation and Revision Plans for 2010 (GONGXINTINGKE [2010] No. 74) of the Ministry of Industry and Information Technology and of the Notice on Forwarding the Notice of the General Office of the Ministry of Industry and Information Technology on Printing and Distributing the First Batch of Industry Standard Formulation and Revision Plans for 2010 (ZHONGSHIHUALIANZHIFA [2010] No. 222) of the China Petroleum and Chemical Industry Federation.

From the date of its implementation, this code replaces the Design Regulation for Tracing and Insulation of Instrument and Impulse Line HG/T 20514-2000.

The drafting group carried out extensive investigation and research, conscientiously summarized practical experience, made reference to relevant international standards and advanced foreign standards, and completed the revision on the basis of fully soliciting opinions.

The main technical contents of this code: Part 1 covers the tracing and insulation methods of instruments and impulse lines, including hot water tracing, steam tracing, electrical tracing, insulation, and heavy tracing and light tracing with hot water and steam; Part 2 covers insulation design, including the insulation structure and the calculation of insulation layer thickness; Part 3 covers the calculation of the tracing system, including the calculation of hot water consumption, steam consumption and electrical tracing power; Part 4 covers the design of the tracing system, including hot water, steam and electrical tracing systems; Part 5 covers the installation of the tracing system, including the installation calculation of hot water and steam tracing lines, steam traps and electrical heat-tracing cables; Part 6 covers instrument heat insulation boxes, including the principles of provision and the composition of heat insulation boxes, and the classification and specifications of box bodies.

Compared with HG/T 20514-2000, the main changes of this code are as follows:

1. The chapter "Terms" has been added;
2. The section "Power calculation of electrical heat-tracing" has been added;
3. The section "Calculation of cold insulation layer thickness" has been added;
4. "Heat insulation materials" has been improved;
5. "Selection requirements for heat insulation boxes" has been added;
6. Calculation procedures such as "hot water consumption and steam consumption" have been deleted from the main text, and all calculation procedures have been moved to the appendixes. On the basis of modifying and supplementing the original regulation, the table of contents and the contents of this code have been rearranged.

This code was proposed by and is under the jurisdiction of the China Petroleum and Chemical Industry Federation.

The Jilin Design Institute of CNPC Northeast Refining and Chemical Engineering Co., Ltd. is responsible for the explanation of the technical contents of this code. Any comments or suggestions arising during the implementation of this code should be sent to the Jilin Design Institute of CNPC Northeast Refining and Chemical Engineering Co., Ltd. (address: 3rd Floor, Economic and Trade Building, East End of Tongtan Avenue, Changyi District, Jilin City, Jilin Province; postcode: 132002) for reference in future revisions.

Chief development organization of this code: Jilin Design Institute of CNPC Northeast Refining and Chemical Engineering Co., Ltd.

Participating development organizations: Daqing Petrochemical Engineering Co., Ltd.; China HuanQiu Contracting and Engineering Corporation Liaoning Branch.

1 General provisions

1.0.1

This code is formulated with a view to unifying the technical requirements for the tracing and insulation design of instruments and impulse lines in the chemical industry, promoting the standardization of the tracing and insulation engineering design of instruments and impulse lines, and achieving the objectives of advanced technology, economic rationality, safety and applicability.

1.0.2

This code is applicable to the tracing and insulation design of instruments and impulse lines of chemical plants, including the scope of application, service requirements, material selection and piping methods.

1.0.3

This code specifies the tracing and insulation methods of instruments and impulse lines, the design of tracing and insulation systems, the selection of insulation layer and protection layer materials, and the selection of heat insulation boxes.

1.0.4

In addition to complying with the requirements of this code, the tracing, insulation and heat preservation design of instruments and impulse lines shall also comply with the provisions of the current relevant national standards.

2.0.1 insulation

Measure of providing an insulation layer on the outer wall of equipment and pipelines to reduce heat conduction, in order to reduce the loss of heat or cold of the medium inside them and to prevent scalding or frostbite of persons; general term for heat insulation and cold insulation.

2.0.2 heat insulation

Covering measure taken on the outer surface of equipment, pipelines and accessories to reduce the heat they dissipate to the surrounding environment.

2.0.3 cold insulation

Covering measure taken on the outer surface of low-temperature equipment and pipelines to reduce the heat transferred from the surrounding environment into them and to prevent condensation on their outer walls.