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

GB 50160-2008

Replacing GB 50160-1992

Fire prevention code of petrochemical enterprise design

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1 General Provisions

1. This code is formulated in order to prevent and reduce the fire hazard in petrochemical enterprises and protect the security of person and property.

1.0.2 This code is applicable to the fire prevention design of construction, extension and

renovation engineering of petrochemical enterprises. 1.1 The fire prevention design of petrochemical enterprises shall not only comply with this code, but also comply with those specified in the current relevant standards of the nation.

2.1 Petrochemical enterprise

It refers to the oil refinery, petrochemical plant, petroleum chemical enterprise or other combined plant that produce, store and transport various petrochemical products with petroleum, natural gas and their products as raw materials.

2.0.2 Plant area

It refers to the area composed of the production area, utility & auxiliary facility area and production management area in the plant wall or boundary.

2.0.3 Production area

It refers to the area composed of process unit and/or equipment for using and producing flammable substance and those that may emanate flammable gas.

2.0.4 Utility & auxiliary facility

It refers to the necessary facility that does not directly participate in but has auxiliary actions on production and in the production process of petrochemical engineering.

2.0.5 Overall major facility

It refers to the facility that influences the production of plant complex or may result in severe

personal injury in the fire hazard. The overall major facility may be classified into two kinds. The first kind. is the facility that may result in severe personal injury when fire hazard breaks out. The second kind. Is the facility that will influence the production of plant complex when the fire hazard breaks out.

2.0.6 Regional major facility It refers to the facility that influences the production of part process plant or may result in severe personal injury in the fire hazard.

2.0.7 Fired site It refers to the indoor and outdoor fixed site where is with exposed flame and red hot surface.

2.0.8 Fired equipment It refers to the heating equipment and waste gas incineration equipment with the firebox connected with atmosphere and exposed flame at improper on occasions conditions.

2.0.9 Sparking site

It refers to such site as chimney with spotting fire, outdoor grinding wheel, electric welding, autogenous welding (torch cutting), and outdoor non-explosion-proof electrical switch.

2.0.10 Process plant area

It refers to the area composed of one or more than one independent petrochemical plant or multiple process plants.

2.0.11 Multiple process plants

It refers to a set of plants arranged with two or more than two unit plants densely, and the plants feed directly without the intermediate feed reservoir for overhauling, and their commencement or break-down maintenance shall be carried out synchronously.

2.0.12 Process plant

It refers to the combination of one or more than one interdependent art process units.

2.0.13 Process unit

It refers to the combination of the equipments, pipelines and instruments of one technological operation process completed according to the production.

2.0.14 Process equipment

It refers to the reactor, tower, heat exchanger, vessel, heater and pump needed for realizing the technical process.

2.0.15 Enclosed industrial building (warehouse)

It refers to the building of productibility (storage capability) set with roof and with the peripheral structure wholly adopting closed wall (including door and window) structure.

2.0.16 Semi-enclosed industrial building

It refers to the productive building set with roof, and the outer fender structure partially adopts closed wall in area not exceeding half of the area outer enclosure surface of this building.

2.0.17 Opened industrial building It refers to the building set with roof but no outer fender structure.

2.0.18 Process storage within process plant

They are the storage tanks (set) arranged in the process plant for balancing production and products or primary launching according to the process requirements, but they shall not directly participate in the technical process in the regular production process of process plant.

2.0.19 Liquefied hydrocarbon At 15 °C, it refers to the hydrocarbon liquid and other similar liquids with vapor pressure larger than 0.1 MPa, excluding liquefied natural gas.

2.0.20 Gas It refers to C₃, C₄ and their mixture that is at gas state at normal temperature and pressure and shall be at liquid state after compressing and cooling.

2.0.21 Boil-over liquid

It refers to viscous hydrocarbon mixture that may occur boil over phenomena caused by quick vaporizing of water layer at tank bottom due to the thermal transmission action when the medium temperature in tank rises.

2.0.22 Dike

It refers to the structures for preventing the liquid from out-flowing and the fire hazard from spreading when the flammable liquid material storage tank occurs with leakage accident.

2.0.23 Intermediate dike

It refers to the structure dividing one tank battery into several subareas for reducing the range of influence when the storage tank in dike occurs with little leakage accident.

2.0.24 A group of storage tanks

It refers to one or more of storage tanks arranged in one dike.

2.0.25 Tank farm

It refers to the area composed of one or more of tank batteries.

2.0.26 Floating roof tank (external floating roof tank)

It refers to the storage tank by setting a floating roof top in open storage tank, which is also named as floating roof tank.

2.0.27 Atmospheric storage tank

It refers to the storage tank with design pressure less than or equal to 6.9kPa (gauge pressure at tank deck).

2.0.28 Low-pressure storage tank

It refers to the storage tank with design pressure is larger than 6.9kPa and less than 0.1MPa (gauge pressure at tank deck).

2.0.29 Pressurized storage tank

It refers to the storage tank with design pressure larger than or equal to 0.1MPa (gauge pressure at tank deck).

2.30 Single containment storage tank It refers to the single-wall storage tank with thermal insulating layer or the storage tank tha...