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Key words: oil depot, storage tank, wind - resistant ring, design, calculation, wind - resistance, measures.

6 Practice and Enlightenment of Lowering Installation Height of Floating Plate of Internal Floating Roof Tank under Low Inventory Operation. Liu Hui.

Abstract: In order to avoid the risk of falling price of oil products and reduce capital occupation, the installation height of floating plate in the specifications "Code for design of vertical cylindrical welded steel oil tanks (GB 50341 - 2014)" "Technical specification for assemble internal floating roofs of storage tank in petrochemical industry (SH/T 3194 - 2017)", "Safety technical code for vertical cylindrical welded steel oil tank (AQ 3053 - 2015)" is discussed. The practice of reducing the installation height of the floating plate in the relevant oil depots is explored. The risks brought by reducing the installation height of floating plate on floating plate maintenance, tank cleaning, construction and transformation, and the operation after transformation and control measures are pointed out. It can reduce the cost of capital occupation, increase the turnover of storage tanks, increase the available volume of storage tanks, achieve inventory efficiency, reduce the labor of employees, and reduce the risk of operation safety.

Key words: lowering, oil product, storage tank, internal floating roof, floating plate, height, exploration, practice.

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electronic equipment and sensors often suffer from lightning stroke in recent years with the development of the information system construction of the oil depot, and the damage of lightning stroke to the electronic information system is analyzed. The main measures for lightning protection of the information system are put forward in terms of the selection and construction of lightning protection for the information system. Firstly, the integrated lightning protection system should be erected according to the four principles of dividing, bonding, shielding, and earthing (DBSE Technology). The main measures for external lightning protection are lightning arrester, down lead, shielding and grounding device; the internal lightning protection measures are installation of surge protective device (SPD), reasonable wiring and equipotential connection. Secondly, using lightning rod, lightning strip, lightning wire and lightning network as lightning arresters, the lightning current is discharged into the ground and the power supply, signal is protected by equipotential connection, repeated grounding and metal shielding.

Key words: oil depot, information, system, lightning protection, protection, measures.

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Key words: oil depot, LoRa technology, oil storage, automation, sensation, system, design.

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Key words: waterfront, oil depot, oil station, oil product, leakage, emergency, management, measures.

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21 Analysis on Causes for Unqualified Oil Products from Pipeline and Control Measures. Liu Hongqi.

Abstract: Oil quality incidents are prone to occur when using a pipeline to transport a variety of oil products in sequence. The causes of three oil quality incidents including unqualified final boiling point at the bottom of a gasoline tank, unqualified flash point at the top of a diesel tank and abnormal oil mixing in an oil depot are analyzed. On the premise of minimizing the amount of mixed oil in pipeline transportation and avoiding oil stratification in the tank, the measures to control the quality of pipeline oil products are put forward: the first is to avoid long-term standing oil tanks or frequent high-level oil delivery; the second is to optimize the operating procedures of oil downloading process; the third is to formulate the closed-loop management process of equipment failure; the fourth is to optimize the oil download amount after mixed oil cutting; the fifth is to reduce the oil mixing amount in the pipeline system in station; the sixth is to optimize the cutting ratio of mixed oil according to the changes of gasoline and diesel download; the seventh is to optimize the equipment selection and improve the recycle ratio of mixed oil.

Key words: oil product, pipeline, transportation, quality, control, measures.

25 Study on Stratification of Water-Containing Ethanol Gasoline. Wang Siming, Song Lijun, Zhan Yuechen, Liang Xin.

Abstract: In view of the stratification of ethanol gasoline for vehicles due to the hydrophilicity of ethanol, the static tests of two groups of ethanol gasoline (E10) with different water content at room temperature ($15.5\text{ }^{\circ}\text{C} \pm 2.0\text{ }^{\circ}\text{C}$) and low temperature ($2.0\text{ }^{\circ}\text{C} \pm 2.0\text{ }^{\circ}\text{C}$) were carried out to observe the stratification phenomenon and study the effects of water content and storage temperature on the precipitation of water or ethanol. The results show that for the samples with water content less than 0.404% (mass fraction), no water precipitation occurs no matter whether it is stored at room temperature or low temperature; for the samples with water content greater than or equal to 0.404%

(mass fraction), whether stored at room temperature or low temperature, with the increase of standing time, the higher the water content is, the more obvious the precipitation of water is, and the lower the storage environment temperature is, the more water is obtained, and the more easily the stratification phenomenon occurs; the samples with water content greater than or equal to 0.404% (mass fraction) stored in the low-temperature environment show ethanol precipitation along with water, which indicates that the low-temperature environment not only promotes the precipitation of water, but also promotes the precipitation of ethanol.

Key words: vehicle ethanol gasoline, water content, stratification, problem, test, research.

SAFETY MANAGEMENT

28 Safety Risk and Prevention of Hydrogen Filling Station. Xiao Haiming.

Abstract: The development of hydrogen energy, hydrogen vehicles and hydrogen filling stations are briefly described. Based on comparing physical and chemical characteristics with natural gas, liquefied petroleum gas and gasoline, the instinct safety risks of hydrogen are pointed out. At the same time, based on the accident cases occurred in hydrogen production, storage and transportation as well as the operation of hydrogen stations, the safety risks such as illegal operation, improper equipment selection, poor hydrogen quality and inadequate routine maintenance are pointed out. The corresponding preventive measures are put forward to ensure the safe operation of the hydrogen station as follows: the first is to design and build the hydrogen station in strict accordance with the specifications and standards; the second is to properly solve the problems that some provisions of relevant specifications are not very clear or unified; the third is to ensure the quality of equipment selection and installation; the fourth is to set up a reasonable safety interlocking system; the fifth is to ensure the quality of hydrogen gas purchased; the sixth is to establish a perfect organization; the seventh is to establish a perfect system; the eighth is to ensure the relevant personnel trained with certificates; the ninth is to resolutely put an end to "Three Violations of Rules in Safety"; the tenth is to establish a sound emergency system; the eleventh is to pay attention to risk identification; the twelfth is to carry out daily inspection and investigation and treatment of hidden danger.

Key words: hydrogen filling station, hydrogen energy, safety, risk, prevention

33 Safety Prevention and Control in Construction of Double Layer Oil Storage Tank in Gas Station. Song Weijun.

Abstract: Based on the brief introduction of the types, materials, advantages and disadvantages of

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Key words: gas station, double layer oil tank, construction, safety, prevention and control, measures.

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Key words: state owned, oil, sales, enterprises, idle, land, revitalization, countermeasures.

38 Supporting Role of Regional Distribution Center on Supply Chain of Gas Station Convenience Stores. Yuan Haidong.

Abstract: The storage network of chain convenience stores in gas station and the operation status of Walmart and Yonghui supermarket distribution center are introduced, the important role of regional distribution center in hierarchical storage network is pointed out, and the necessity, importance and economy for gas station chain convenience store to layout regional distribution center are analyzed. The construction path of regional distribution center is put forward from the aspects of function orientation and scale, location factors, advantages and disadvantages of self-construction and leasing, and the advantages and disadvantages of self-operated and outsourcing regional distribution centers are analyzed, which can provide reference for the construction of regional distribution center of gas station chain convenience stores.

Key words: gas station, chain, convenience store, region, distribution center, construction, research.