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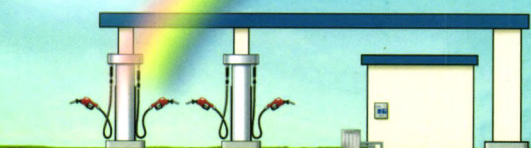
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目 次

储运技术

- 1 双层玻璃钢储油罐承压试验研究 闫 静 宋光武 孙雪松 李 钢
- 4 双层油罐及其泄漏监测方法简介 王永胜 秦 建 吴文鸿 孙国伟
- 6 成品油铁路油库扫槽工艺设计分析 逯 旭
- 9 中国石化北京石油分公司储运设施优化整合方案的探讨及经济分析 尼 进

信息技术

- 14 油库自动化发展趋势 朱凌云 孟彦涛
- 18 中国石化北京石油分公司虚拟化应用系统建设的思路 李 鹏

环境保护

- 25 油品销售企业碳盘查快速估算方法的探讨 周金广 赵 亮 张健中 孙伟森
- 28 吸附法油气回收装置真空泵的选型与应用 刘 栋 张健中 李俊杰
- 31 加油站油气回收的几个认识问题的探讨 赵志云

数质量管理

- 33 用全站仪径向偏差法检定立式金属油罐容量方法的验证 胡永刚 秦 辉

安全管理

- 39 石化销售企业设备管理的现状及对策(“生命的保护,我与HSE同行”征文) 石锦献 程民军

经营管理

- 42 当前推广自助加油中存在的问题与对策 张 琪

报道及其他

- 8 2013年第5期广告目次
- 44 2014年《石油库与加油站》杂志征订启事



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Contents and Abstracts

STORAGE TECHNOLOGIES

1. Study on Pressure Test of Double - Layer FRP Tank. Yan Jing, Song Guangwu, Sun Xuesong, Li Gang.

Abstract: The pressure bearing capacity of double - layer FRP (Fiber Reinforced Plastics) tank is obtained through comparison with single - layer FRP tank which pressure bearing limit can be calculated. The stiffness of double - layer and single - layer FRP tank is calculated and the relative stiffness value is obtained. By simulating field situation, the maximum load vehicle compacting test is carried out on double - layer FRP tank to obtain the actual pressure bearing value. Based on the calculation, field compacting test, and investigation, the pressure bearing situation of double - layer FRP tank under driveway is achieved, and the technical measures should be adopted in gas station construction are proposed.

Keywords: double - layer FRP tank, pressure bearing calculation, pressure bearing test.

4. Discussion on Leakage Detection Methods for Double - Layer Oil Tank. Wang Yongsheng, Qin Jian, Wu Wenhong, Sun Guowei.

Abstract: The category of double - layer tanks are introduced, and the performance of different tank wall materials are compared. According to the requirements of the national standard for leakage detection, the leakage detecting methods and their advantages and disadvantages are introduced. Some advices are proposed that liquid sensor is suitable for leakage detection and antifreeze should be used as liquid medium.

Keywords: double - layer tank, liquid sensor, leakage detection.

6. Analysis and Design of Tanker Purging Process for Product Oil Railway Depots. Lu Xu.

Abstract: Several tanker purging process systems are introduced and compared, and the advantages and disadvantages of them are explained. It is pointed out that optimizing the design of part of purging system can improve the purging efficiency.

Keywords: oil depot tanker purging process, vacuum system, gas - liquid mixing transportation, tanker purging.

9. Discussion and Economic Analysis on Optimization and Integration Project of Storage and Transportation Facilities in SINOPEC Beijing Oil Products Company. Ni Jin.

Abstract: Based on deep analysis of the storage and transportation system status in SINOPEC Beijing Oil Products Company, combining the external environment variation, the necessity of optimizing storage and transportation facilities is raised. Meanwhile, through qualitative analysis and economic evaluation methods, the optimization scheme for oil depots and storage and transportation facilities is proposed, which provide reference for SINOPEC Beijing Oil Products Company in order to enhance the company's storage and transportation facility optimization and integration efficiency.

Keywords: storage and transportation facility, oil depot, pipeline, optimization.

INFORMATION TECHNOLOGY

14. The Developing Trend of Oil Depot Automation. Zhu Lingyun, Meng Yantao.

Abstract: The developing course, status of automation system in oil depot, and the existing problems in current automation system are simply introduced. The developing trend of automation system in oil depot is pointed out including that oil depot automation degree is increasing, control mode advance towards integrated control mode, building database - based integrated data platform makes oil depot construction developing in the direction of intelligence.

Keywords: oil depot, automation technology, de-

veloping trend.

18. Virtualized Applications System Construction in SINOPEC Beijing Oil Products Company. Li Peng.

Abstract: The operation and maintenance stress existing in current external desktop applications in Beijing Oil Products Company are analyzed simply. The construction ideas for virtualized applications system is emphasized, and the technical route and two - stage scheme design is proposed, which can provide technical support for stable operation of applications on terminal desktops.

Keywords: virtualized desktop, operation and maintenance, virtualization technology, applications system, construction ideas.

ENVIRONMENT PROTECTION

25. Rapid Estimating Method for Carbon Inventory of Oil Products Sales Enterprise. Zhou Jinguang, Zhao Liang, Zhang Jianzhong, Sun Weisen.

Abstract: The carbon emissions from oil products sales enterprise are highly homogeneous characteristics. The greenhouse gas emissions mainly come from electricity consumption in operations, fuel consumed in logistics and transportation, coal for heating in winter, etc., and these data are closely related to the business scope, assets size, and geographical coverage of enterprise. Using the operation scale, asset data, operational data, the carbon emissions data is reckoned. The calculation formula for oil products sales enterprise to calculate greenhouse gas emissions is first proposed, by which a lot of manual investigation costs can be saved.

Keywords: oil products sales enterprise, greenhouse gases, rapid estimation.

28. Selection and Application of Vacuum Pumps for Oil Vapor Recovery Unit with Adsorption Method. Liu Dong, Zhang Jianzhong, Li Junjie.

Abstract: The oil vapor recovery unit with the scheme of active carbon adsorption/vacuum desorption/gasoline absorption combination is introduced, and the selection of vacuum pumps for oil vapor re-

covery unit is analyzed. The defect of water ring vacuum pump in application is pointed out, and adopting dry vacuum pump for oil vapor recovery unit is proposed. Taking a 300m³/h treating unit as an example, the calculating method of pumping speed of vacuum pump is given, and pump frequency control principles of vacuum pump and control flow of axial cooling are advised. The application results of oil vapor recovery units in hundreds of oil depots show that the oil vapor emission can meet the requirements of national standards, and the design and selection of units is reasonable and effective.

Keywords: oil vapor recovery unit, active carbon adsorption, vacuum pump, selection.

31. Several Problems about Oil Vapor Recovery in Gas Station. Zhao Zhiyun.

Abstract: The awareness problem existing in oil vapor recovery system of gas station, economic benefit, social benefit, accelerating oil vapor recovery equipment localization, and other issues are discussed.

Keywords: gas station, oil vapor recovery, economic benefit, social benefit.

QUANTITY AND QUALITY MANAGEMENT

33. Determination of Vertical Metal Tank Capacity Using Radial Deviation Method of Electronic Total Station. Hu Yonggang, Qin Hui.

Abstract: The standard uncertainty of measuring vertical metal tank capacity using radial deviation method of electronic total station (ETS) and the relative expanded uncertainty of the capacity of 500, 700, 1000, and 5000m³ oil tanks were analyzed, and compared with the capacity of 2000 and 5000 m³ oil tanks determined using optical plumb method. Combining actual measuring experience, the feasibility for determining vertical metal tank capacity using ETS radial deviation method was demonstrated. The results showed that the method was characterized by wide applicable range, high

automation degree of measurement, high speed and labor-saving.

Keywords: electronic total station, vertical metal tank, capacity measurement, uncertainty evaluation, comparison.

SAFETY MANAGEMENT (HSE ACTIVITIES ESSAY)

39. The Status of Equipment Management in Petrochemical Sales Enterprise and Countermeasures. Shi Jinxian, Cheng Minjun.

Abstract: The status of equipment management in petrochemical sales enterprises is introduced, and the main problems in equipment management are pointed out. The countermeasures are presented, such as insisting whole process management, strengthening equipment and facilities maintenance, integrating equipment management functions, comprehensive and professional knowledge training, strengthening institution-building and staffing, and improving the assessment mechanism.

Keywords: petrochemical sales enterprise, equipment management, problem, countermeasure.

OPERATION MANAGEMENT

42. The Problems Existing in Popularizing Self-service Refueling Mode and Countermeasures. Zhang Qi.

Abstract: The problems existing in self-refueling mode are pointed out including lack of payment means, security risks, traditional consumption habits of customers, easy-produced dispute. The countermeasures are proposed that the location selection of self-service refueling station should be investigated, the propaganda should be improved by multi-channels, management tools and equipment, safety management should be strengthened, and the marketing mode should change.

Keywords: gas station, self-service refueling, problem, countermeasure.