

★中国核心期刊 (遴选) 数据库收录期刊
★中国学术期刊综合评价数据库 (CAJCED) 统计源期刊

ISSN 1008-2263
CN 11-3945/TE

OIL DEPOT AND GAS STATION

石油库与加油站

SHIYOUKU YU JIAYOUZHAN



ONE COMPANY. ONE WORLD. ONE SOURCE.™

OPW
A DOVER COMPANY

OPW网上商城正式上线
<http://shop.opwglobal.com.cn>

优品在线 质在必得

www.opwglobal.com.cn

☎ 客服热线: 400-828-0233
☞ 微信公众号: opwchina



ISSN 1008-2263
06 >
9 771008 226006



中国石化销售有限公司主办

2015 第 **3** 期

第24卷 总第139期
Vol.24 Total No.139



石油库与加油站

SHI YOU KU YU JIA YOU ZHAN

1992年创刊(双月刊)

第24卷 第3期

总第139期

2015年6月20日出版

编委会名誉主任:李春光 张海潮

编委会主任:左兴凯

副主任:郭飞鸿 王文联 王维民

王靓

特邀顾问:吕品 柴志明

委员:

张秀来 王洪川 徐福斌 张紫微

冯培育 李玉杏 芮继强 陈必文

尹超明 任士宪 杜予斌 杨计明

黄河 李一庆 郑京华 贾约鹏

罗开勇 阎华 黄炳利 柳湘滨

张天明 罗统华 牛竞民 王津培

韩庆跃 刘华斌 王敏 韩杰

夏凤梧 王安 戴福俊 周雪洪

徐江桥 刘胜 何明 张毅

卜文平 高劲松 杜道林 沈青祁

杜红岩 周家祥 韩钧 金万刚

社长:左兴凯

副社长:郭飞鸿 王文联

主编:王维民

副主编:金万刚

责任编辑:张玉

主管:中国石油化工集团公司

主办:中国石化销售有限公司

编辑出版:《石油库与加油站》杂志社

国内发行:《石油库与加油站》杂志社

地址:北京市东城区广渠家园6号楼

303室

邮编:100022

电话:(010)67006041;67006042

传真:(010)67006043

E-mail:sykjyz@vip.sina.com

国外发行:中国图书进出口总公司

国外发行代号:2263BM

印刷:廊坊飞腾印刷包装有限公司

厂址:廊坊市安次区永华道25号

邮编:065000

标准连续出版物号:ISSN 1008-2263

CN 11-3945/TE

广告许可证号:京东工商广字第8033号

国内定价:每册12元,全年72元

本刊对所载图文拥有

版权,未经许可,不得转载

或复制,本刊保留追诉的

权利。

目次

储运技术

- 1 玻璃钢内衬改造技术在加油站埋地钢制油罐中的应用 陶彬 张玉平 孙秀明 贾光

安全技术

- 3 影响石油库接地网接地电阻测量准确性的因素与防范措施 张学

加气站

- 6 CNG常规加气站设备选型的探讨 江宁 张健中 许光 周日峰
- 10 液化天然气(LNG)箱式橇装加注装置安全应用的探讨 李咪毛
- 14 浅析LNG加气站储罐计量准确性的影响因素及对策 张进

环境保护

- 19 地下水资源保护与加油站埋地双层玻璃纤维增强塑料油罐的应用 尹强 曹琛 赵坤芳

数质量管理

- 22 气相色谱测定汽油中含氧化合物综述 王祥保
- 25 车用汽油中四种非法添加物的特点和检测方法 张莉 刘莹 李林潞 王福江
- 29 加油站油气回收对损耗管理的影响因素探讨 陈炫光

安全管理

- 33 加油站双层储油罐施工的安全管理 关长春
- 35 构建油库团队安全,规避个体人为失误的措施 刘文雄

经营管理

- 38 平衡计分卡在国有油品销售企业绩效管理中的应用探索 王瑜
- 42 加油站建设项目的投资控制 王家兴

报道及其他

[后插1] 《石油库与加油站》投稿须知

- 9 中国石化加快成品油质量升级
- 18 京津冀鲁年底统一供应国5油
- 24 《石油库与加油站》杂志2014年度合订本征订启事
- 37 2015年第3期广告目次



Honorary Chairman of Editorial Committee: Li Chunguang, Zhang Haichao

Chairman of Editorial Committee: Zuo Xingkai

Vice Chairman of Editorial Committee: Guo Feihong, Wang Wenlian, Wang Weimin, Wang Liang

Special Consultants: Lu Pin, Chai Zhiming

Members: Zhang Xiulai, Wang Hongchuan, Xu Fubin, Zhang ziao, Feng Peiyu, Li Yuxing, Rui Jiqiang, Chen Biwen, Yin Chaoming, Ren Shixian, Du Yubin, Yang Jiming, Huang He, Li Yiqing, Zheng Jinghua, Jia Yuepeng, Luo Kaiyong, Yan Hua, Huang bingli, Liu Xiangbin, Zhang Tianming, Luo Tonghua, Niu Jingmin, Wang Jinpei, Han Qingyue, Liu Huabin, Wang Min, Han Jie, Xia Fengwu, Wang An, Dai Fujun, Zhou Xuehong, Xu Jiangqiao, Liu Sheng, He Ming, Zhang Yi, Bu Wenping, Gao Jinsong, Du Daolin, Shen Qingqi, Du Hongyan, Zhou Jiexiang, Han Jun, Jin Wangang

Director: Zuo Xingkai

Vice Director: Guo Feihong, Wang Wenlian

Editor-in-Chief: Wang Weimin

Vice Editor-in-Chief: Jin Wangang

Editor-in-Charge: Zhang Yu

Responsible Department: China Petrochemical Corporation (SINOPEC)

Sponsor: SINOPEC Sales Company

Publisher: Editorial Office of Oil Depots and Oil Stations

Distributor (Domestic): Editorial Office of Oil Depots and Oil Stations

Address: Building No. 6, Guangqujiayuan, Dongcheng District, Beijing

Postcode: 100022

Tel: (010) 67006041; 67006042

Fax: (010) 67006043

E-mail: sykjyz@vip.sina.com

Distributor (Abroad): China National Publication Import & Export Corporation

Printer: Fei Teng Printing Co. Ltd of Langfang

Address: No. 25, Yonghua Dao Ave Langfang

Postcode: 065000

ISSN 1008—2263; **CN** 11—3945/TE

No. of Ad. License: 8033, Dongcheng District, Beijing

Domestic Price: RMB72 per year

Copyright for all originally published reports.

Contents and Abstracts

STORAGE TECHNOLOGIES

1 Application of FRP Lining Modification Technology in the Buried Steel Oil Tank in Gas Station. Tao Bin, Zhang Yuping, Sun Xiuming, Jia Guang.

Abstract: With the gradual implementation of the China National Emission Standards V all over the country, China will promote the use of low sulfur or ultra low sulfur fuels. In view of the serious corrosion problems existing in the process of the use of ultra low sulfur diesel in developed countries of Europe and America, and the situation that most of gas stations of the SINOPEC Corporation use the buried monolayer steel oil tank, the buried tank lining technology is proposed to avoid the corrosion of the tank, by which the buried monolayer steel tanks can be transformed into double-layer tank. The technology can reduce the downtime of gas station and the construction cost, providing support to the oil upgrading.

Keywords: underground tank, FRP lining, ultra low sulfur diesel.

SAFETY TECHNOLOGY

3 The Factors Influencing Resistance Measuring Accuracy of Grounding Grids in Oil Depot and Preventive Measures. Zhang Xue.

Abstract: Based on the analysis of the grounding grid of oil tanks area in oil depot, the factors influencing the resistance measuring accuracy of grounding grids in oil depot are discussed, and the potential hazards, the precautions in the measuring process, and the improvement measures in design and construction of grounding grid of oil depot are proposed to ensure the safe operation of oil depot.

Keywords: oil depot, grounding grid, measurement, preventive measures.

GAS REFUELING STATION

6 Discussion on Equipment Selection of Conventional CNG Refueling Station. Jiang Ning, Zhang Jianzhong, Xu Guang, Zhou Rifeng.

Abstract: Combining with the conventional CNG refueling station process, basing on the external conditions of a planned gas refueling station, according to the requirements of national standards and industry experience, the selection method of the main equipments for the conventional CNG refueling station is presented, including pressure - adjusting and measuring equipments, desulfurization equipment, dewatering equipment, compressors, program control panel, storage facilities, gas refueling gun, control system and instrument air system etc. The proposed method, under the precondition of satisfying the demands of routine refueling volume, peak period refueling volume and other constraints, can save the equipments investment and operation and maintenance cost as far as possible, which can effectively improve the refueling station operation efficiency and economic benefit.

Keywords: conventional CNG refueling station, equipment selection, compressor, gas storage facilities, refueling machine.

10 Discussion on the Safe Application of Box Type Skid - Mounted Refueling Device of Liquefied Natural Gas (LNG). Li Mimao

Abstract: With regard to the common problems existing in the construction and application of box type skid - mounted LNG refueling devices in bus stations in Beijing area, the characteristics of box type skid - mounted LNG refueling devices, and the problems needing attention in the process of design, installation and application are described.

Keywords: liquefied natural gas, box type skid - mounted, refueling device.

14 Analysis on the Factors Influencing Tank Measuring Accuracy in LNG Refueling Station and Countermeasures. Zhang Jin.

Abstract: The problems exist generally in LNG refueling station at present that the measurement of storage tanks is inaccurate, and the data of loss is not true. In order to improve the measurement accuracy of inventory in LNG refueling station, basing on the

analysis of 4 factors influencing tank measuring accuracy in LNG refueling station, the corresponding methods to improve measuring accuracy were put forward, such as low temperature correction of tank volume table, prevention of the medium tumbling of storage tank, improving the liquid level meter readings accuracy, and calculating the exact density of LNG, and the accuracy of the improved methods was verified by comparison of data. The improved calculation method can improve the accuracy of measurement to some extent and help to clarify the real loss data.

Keywords: liquefied natural gas, storage tank, measurement, accuracy, countermeasure.

ENVIRONMENTAL PROTECTION

19 The Protection of Groundwater Resources and Application Prospect of Buried Double - Layer Glass Fiber Reinforced Plastic Oil Tank in Gas Station. Yin Qiang, Cao Chen, Zhao Kunfang.

Abstract: Starting from the types of buried storage tanks used in domestic gas stations and the analysis of the groundwater pollution risk caused by the leakage of buried storage tank, through the comparison and analysis of the tank types used in gas stations and the foreign advanced experience, combining with the status of oil products quality upgrading, it is concluded that the buried double - layer glass fiber reinforced plastic tank will have broad application prospects in environmental protection.

Keywords: gas station, buried oil tank, leakage, environmental protection.

QUANTITY AND QUALITY MANAGEMENT

22 Review on Determining Oxygenated Compounds in Gasoline Using Gas Chromatography. Wang Xiangbao.

Abstract: The applications of gas chromatography in determining oxygenated compounds in gasoline are summarized. The valve switching technology recommended in the current standard and the capillary flow technique were compared, and the capillary flow technique showed the advantages of simple operation, small deviation, good reproducibility, and high precision.

Keywords: gas chromatography, oxygenated compound, gasoline.

25 The Characteristics and Detection of Illegal Additives in Motor Gasoline. Zhang Li, Liu Ying, Li Linlu, Wang Fujiang.

Abstract: The hazards and sources of the illegal additives, such as silicon, chlorine, methylamine, in gasoline are analyzed. It is proposed that before the implementation of new formal standards, the silicon contents can be monitored using single - wavelength dispersive X ray fluorescence spectrometry and inductively coupled plasma - atomic emission spectrometry (ICP - AES); the chlorine content can be determined using micro - coulometric method; the methylal can be analyzed qualitatively and quantitatively using oxygen selective flame ionization detector - gas chromatography, infrared spectroscopy, two - dimensional gas chromatography and GC - MS spectrometry; the nitrogen content in gasoline can be determined using chemiluminescence method, and when the addition of aniline is preliminarily confirmed, the above spectra, GC - MS spectrometry or gas chromatography method can be used to qualitatively and quantitatively determine the aniline content, providing basis for determining illegal addition.

Keywords: motor gasoline, illegal additives, hazard, detection.

29 Discussion on the Factors Influencing Loss Management in Oil Vapor Recovery in Gas Station. Chen Xuanguang.

Abstract: Starting from the working principle of the first recovery and secondary recovery in gas station, the main factors influencing oil loss management in oil vapor recovery are analyzed, the measures to improve oil vapor recovering efficiency and reduce oil loss are presented; the overall tightness of the oil vapor recovery system should be ensured through reasonable selection of gas - liquid ratio, and improved inspection of the O - ring seal to ensure the effectiveness.

Keywords: gas station, oil vapor recovery, influence factors, measures.

SAFETY MANAGEMENT

33 Safety Management of Double - Layer Tank Construction in Gas Station. Guan Changchun.

Abstract: This paper briefly introduces the origin of the double - layer tank technology used in gas stations and the application prospect in China, focusing

on the technical requirements in constructing the buried double - layer tanks and the safety management measures to avoid accidents.

Keywords: gas station, double - layer tank, construction, safety management.

35 Measures to Construct Oil Depot Team Safety and Avoid Individual Human Error. Liu Wenxiong

Abstract: The misunderstanding of zero error management of oil depot staff, and the factors causing the difficulty to achieve personal zero error are analyzed. The safety measures are proposed to construct team safety, and reduce all kinds of errors, by which accident would not occur even if the individual error happens, ensuring the safety of oil depot without accident.

Keywords: oil depot, safety management, team safety, measures.

OPERATION MANAGEMENT

38 Analysis on Application of Balanced Score Card in Performance Management of State - Owned Oil Sales Enterprises. Wang Yu.

Abstract: The concept of the Balanced Score Card (BSC) and its main contents were briefly overviewed, and the advantages of implementing the BSC in enterprise were introduced. A feasibility study on implementing the BSC in oil sales enterprises was carried out. Taking the state - owned oil sales enterprise B Company as an example, the conditions for establishing performance appraisal mechanism with BSC were introduced, and the difficulties to implement the BSC were analyzed. It was pointed out that the implementation of BSC could improve the operation and management quality of the enterprise, and achieve sustainable development.

Keywords: Balanced Score Card, performance management, oil sales enterprise.

42 Investment Control of Gas Station Construction Project. Wang Jiaying.

Abstract: The key points of investment control and management in each phase of gas station project, including the project initiation and approval, the design and execution, and the formal acceptance and audit, are respectively described, with emphasis on the control of construction cost.

Keywords: gas station, construction project, investment control.

北京市优捷特石油设备科技有限公司

大事记

- NUPIGECO中国区域总代理
- 在全国拥有二十余家二级代理服务商
- 2014年入围中石化复合管道系统供应商名单
- 2014年全国范围安装NUPI复合管道加油站1100余座
- 2014年成功大范围应用于加油站油气回收改造项目



- 意大利NUPIGECO公司是专业复合管制造商
- 年销售复合管25000km
- 符合EN14125、UL971及GB50156标准
- 设立权威独立第三方实验室
- 真双层系统，多点渗漏检测系统
- 全球联保30年，知名保险公司ACE承保



地址：北京市朝阳区东四环北路6号1号楼1-1602

服务热线：010-56295527

网址：www.youjiete.com