

★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



Leading the Way in Fueling Innovation Worldwide.



微信公众号:
opwchina



OPW油气回收在线监测系统

- ✓ 油站安全助手
- ✓ 油站智能助手
- ✓ 油站管理助手
- ✓ 油站医生

优必得石油设备(苏州)有限公司
www.opwglobal.com.cn

中国工厂 电话: 0512-62745328 | 上海分公司 电话: 021-24112600 | 北京分公司 电话: 010-80699019 | 广州分公司 电话: 020-28865785

ISSN 1008-2263



9 771008 226006



中国石化销售有限公司主办

2017 第 6 期

第26卷 总第154期

Vol.26 Total No.154



石油库与加油站

SHI YOU KU YU JIA YOU ZHAN

1992年创刊(双月刊)

第26卷第6期

总第154期

2017年12月20日出版

编委会名誉主任:张海潮 夏世祥
编委会主任:张毅
副主任:佟德健 王靓 王维民
特邀顾问:叶慧青 谢劼 王顺江
韩祥峰

委员:

李玉杏 姜晖 许渝峰 洪威
徐福斌 冯东明 秦茂伟 聂时榜
朱建德 王志坤 王琴 邹恩庭
郭自强 黄河 李一庆 卢品宝
黄流雄 罗开勇 伏韬 孙维跃
李国营 李清杰 刘华斌 谭毅
刘悦 田树源 李炜 冯培育
冯宇飞 王飞 任士宪 沈李沪
徐永生 戴福俊 付毅波 江宁
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:张毅

副社长:佟德健

主编:王靓

副主编:金万刚

责任编辑:齐风云

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

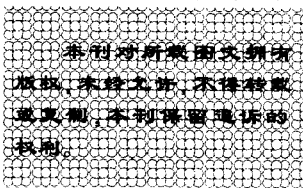
厂址:廊坊市安次区永华道25号

邮编:065000

标准连续出版物号:ISSN 1008-2263
CN 11-3945/TE

广告许可:京东工商广登字20170081号

国内定价:每册15元,全年90元



目次

储运技术

1 覆土立式油罐的设计要点 彭建萍

加气站

5 液化天然气冷能回收系统的研究

..... 林东 王祥保 马芝玉 邓伟

10 LNG加气站异常损耗的原因与对策 王友良

安全技术

12 基于软系统的加油站云重心理论安全评价研究

..... 陈圆超 戴剑勇

数质量管理

18 国际贸易中油气品的损溢控制和管理

..... 俞刚良

22 降低加油站零售体积损耗方法浅析

..... 杨正斌 杨毅

26 加油机胶管对油品硫含量的影响

..... 赵君志

29 GC-OFID法测定汽油中含氧化合物的测量不确定度评定

..... 王朝 王福江

安全管理

34 浅析石油库施工安全管理

..... 王增海

36 石油库和加油站高处作业施工的安全管理

..... 陈小秋

经营管理

39 作业成本法在油库成本管理中的应用

..... 张成娟

报道及其他

4 2018年《石油库与加油站》杂志征订启事

17 《石油库与加油站》杂志2017年度合订本征订启事

21 2017年第6期广告目次

33 中国自主研发生物航煤首次跨洋飞行圆满成功

41 全国安全生产大检查关闭取缔企业3.1万家。

42 《石油库与加油站》2017年总目次



Honorary Chairman of Editorial Committee:

Zhang Haichao, Xia Shixiang

Chairman of Editorial Committee: Zhang Yi

Vice Chairman of Editorial Committee: Tong Dejiang, Wang Liang, Wang Weimin

Special Consultants: Ye Huiqing, Xie Jie, Wang Shunjiang, Han Xiangfeng

Members: Li Yuxing, Jiang Hui, Xu Yufeng, Hong Wei, Xu Fubin, Feng Dongming, Qin Maowei, Nie Shibang, Zhu Jiande, Wang Zhikun, Wang Qin, Zou Enting, Guo Ziqiang, Huang He, Li Yiqing, Lu Pinbao, Huang Liuxiong, Luo Kaiyong, Fu Tao, Sun Weiyue, Li Guoying, Li Qingjie, Liu Huabin, Tan Yi, Liu Yue, Tian Shuyuan, Li Wei, Feng Peiyu, Feng Yufei, Wang Fei, Ren Shixian, Shen Lihu, Xu Yongsheng, Dai Fujun, Fu Yibo, Jiang Ning, Bu Wenping, Gao Jinsong, Du Daolin, Shen Qingqi, Du Hongyan, Zhou Jiaxiang, Han Jun, Jin Wangang

Director: Zhang Yi

Vice Director: Tong Dejiang

Editor-in-Chief: Wang Liang

Vice Editor-in-Chief: Jin Wangang

Editor-in-Charge: Qi Fengyun

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; CN11—3945/TE

No. of Ad. License: 20170081, Dongcheng District, Beijing

Domestic Price: RMB90 per year

Copyright for all originally published reports.

Contents and Abstracts

STORAGE TECHNOLOGY

1 Key Points in Design of Soil – Covering Vertical Oil Tank. Peng Jianping.

Abstract: Based on introducing the definition, the advantages and disadvantages of soil – covering vertical oil tank, the key points in design of soil – covering vertical oil tank were described from the aspects of fire protection distance, architectural design, structural design, waterproof, soil – covering, accident control, and fire protection, which provided a reference for the design of soil – covering vertical oil tank.

Key words: soil – covering vertical tank, definition, design, key points, introduction.

GAS REFUELING STATION

5 Research on Cold Energy Recovery System of Liquefied Natural Gas. Lin Dong, Wang Xiangbao, Ma Zhiyu, Deng Wei.

Abstract: During the liquefied natural gas (LNG) vaporization process, the LNG passes into air – heated evaporator to vaporize with the cold energy released. The cold energy is directly released into the atmosphere, which cause a waste of energy. A cold energy recovery experiment system using liquid nitrogen instead of LNG is designed to absorb the cold energy from LNG vaporization. The refrigerant system selection, data measurement, configuration of experimental system, evaluation index of the experimental system, the analysis and evaluation of experimental results and theoretical calculation are introduced. The performance of heat exchanger and the experimental system is evaluated using the energy analysis method. The results show that the increase of inlet nitrogen pressure will increase the system exergy efficiency; the increase of refrigerant flow will reduce the system exergy efficiency; the measured maximum exergy efficiency of the system is 5.43%. According to the operation data of liquid nitrogen, the return cycle of investment for recovering LNG cold energy is estimated to be 18 years.

Key words: gas stations, liquefied natural gas, cold energy, recovery, experiment, system, research.

10 Causes of Abnormal Loss at LNG Refueling Station and Countermeasures. Wang Youliang.

Abstract: The abnormal loss due to unreasonable process design, improper selection of thermal insulation mode, small volume of LNG sales, and higher temperature of LNG resource, in the initial stage of LNG refueling station was analyzed using an example, and the corresponding countermeasures were put forward, such as optimizing the process design, choosing the appropriate mode of insulation, regulating reasonably liquid input cycle, selecting reasonable LNG source, formulating scientifically liquid operation process, and transferring BOG into CNG. These measures could provide a reference to improve efficiency and reduce the loss of LNG refueling station.

Key words: LNG refueling station, abnormal, loss, reason, analysis, countermeasure.

SAFETY TECHNOLOGY

12 Research on Safety Evaluation of Gas Station Using Cloud Focus Theory Based on Soft System. Chen Yuanchao, Dai Jianyong.

Abstract: According to the situation that the gas station safety is jointly influenced by the non structural factors including internal economic, regulation, and cultural factors, as well as external natural and social factors, it is proposed using the Cherkland soft system methodology (SSM) to explore the non structural factors influencing gas station safety management and construct a new safety evaluation index system. Using the cloud focus evaluation method in cloud theory, the qualitative concept of the system is quantitatively converted, and the weighted deviation degree is used to indicate the gap between the safety status and the ideal safety condition of the gas station, and then the safety evaluation of the gas station is carried out. The analysis of the example shows that the cloud focus evaluation method based on soft system is of important practical significance.

Key words: gas station, safety evaluation, soft system methodology, cloud focus theory, research.

QUANTITY AND QUALITY MANAGEMENT

18 Loss Control and Management of Oil and Gas Products in International Trade. Yu Gangliang.

Abstract: At present, in the international oil trade management, the reasons for the loss of oil are complex, and claim can be made only if the purchasing loss rate exceeded the range of -0.5% , the measurement and management on the source is difficult to control, and artificial shortage is impossible to guard against. The solutions to control oil loss are put forward; according to the international API and ASTM standards, the reasons for the loss should be techni-

cally clarified; for the purchase loss rate over -0.5% , insurance claims should be arranged; the quantity management should be strengthened for the purchase loss less than -0.5% ; based on statistical data, responsibility of suppliers and carriers for the loss should be verified; through online endorsement, the audit signature and the internal control measures should be implemented; the fair behavior of measurement by the third party should be monitored. After the implementation of these measures, remarkable results were achieved and the interest of enterprises was maintained, providing a reference for the relevant enterprises to strengthen the loss control.

Key words: international, petroleum, trade, measurement, loss, management.

22 Analysis on Reducing Volume Loss of Retail in Gas Station. Yang Zhengbin, Yang Yi.

Abstract: From the oil depot delivery, oil transportation, oil receiving in gas station, oil sale error of dispenser, volume table of oil tank, leakage from pipeline and tank, and other factors, the reasons causing retail volume loss in gas station are analyzed, and some corresponding measures are put forward, such as strict inspection of the purchased oil products, verification of dispenser, monitoring the transport process, strengthening the seal management and daily accounting management, daily maintenance of equipments, strict implementation of appraisal system, verification and calibration of tank volume table, temperature correction, enhancing the level of automation measurement, and implementing tank metering and handover.

Key words: gas station, retail, volume, loss, reduction, measures.

26 Influence of Rubber Hose of Fuel Dispenser on Sulfur Content in Oil Product. Zhao Junzhi.

Abstract: According to the sulfur release phenomenon in the retention process of oil products in the rubber hose of fuel dispenser, the immersion tests were carried out by immersing 9 kinds of refueling hose from 5 manufacturers into gasoline or diesel products meeting the national IV or national V standard for different time in the range of 0 - 48 h, and using the "Standard test method for determination of total sulfur in light hydrocarbons, motor fuel and other oil by ultraviolet fluorescence (SH/T 0689 - 2000)", the sulfur contents of the gasoline and diesel samples were determined. With the prolongation of immersing time, the sulfur content of the fuel samples will increase continuously, even exceed the specification value, which will affect the fuel quality. Therefore, it is proposed to drain and wash the rubber hose of the dispenser timely.

Key words: dispenser, hose, oil product, sulfur

content, influence, countermeasures.

29 Evaluation of Measurement Uncertainty of Oxygenates Content in Gasoline Using GC - OFID. Wang Chao, Wang Fujiang.

Abstract: The factors affecting the test results in determining oxygenates content using gas chromatography and oxygen selective flame ionization detection (GC - OFID) in accordance with the SH/T 0720 - 2002 standard were introduced. From the aspects of purity of internal standard, weighing process, peak area measurement, least squares curve fitting, and so on, the uncertainty was analyzed and evaluated, and the expanded uncertainty was obtained.

Key words: gasoline, oxygenates, determination, gas chromatography, measurement, uncertainty, evaluation.

SAFETY MANAGEMENT

34 Analysis on Safety Management in Construction of Oil Depot. Wang Zenghai.

Abstract: Combining with the actual work, an accident caused by construction "sequela" is introduced, and the problems existing in the construction of oil depot are pointed out, such as low quality of construction personnel, poor safety education, weak safety consciousness, and ineffective hazard analysis, site safety supervision and assessment. Some measures are put forward to strengthen the construction safety of oil depot, including preliminary examination, strict safety education, constructing in strict accordance with standard requirements, strict site safety supervision, assessment and accountability.

Key words: oil depot, construction, safety, man-

agement, measures.

36 The Safety Management of Work at Heights in Construction of Oil Depot and Gas Station. Chen Xiaohu

Abstract: The concept and basic situation of the work at height in oil depot and gas station are introduced briefly. The main reasons causing accidents of work at height in oil depot and gas station are analyzed, i. e. unsafe behavior of human, unsafe factors of material, management defects and poor operation environment. The corresponding measures are put forward, such as strengthening the personnel health examination, wearing protective equipment, formulating safety protection program, and implementing safety supervision.

Key words: oil depot, gas station, work at height, construction, safety management, measures.

OPERATION MANAGEMENT

39 Application of Activity - Based Costing in the Cost Management of Oil Depots. Zhang Chengjuan

Abstract: The definition and basic principles of activity - based costing (ABC) and the activity cost accounting procedure are introduced. Taking the cost accounting for 4 oil depots in an oil company as an example, the application of activity - based costing method in the cost accounting in oil depot is illustrated in detail, showing that the accounting results using this method can be closer to the actual operation cost of oil depot, which can provide a more detailed basis to assess the real operation costs of oil depot.

Key words: oil depot, cost, accounting, activity - based costing, application.

LED 油站气站防爆灯

产品特点 / PRODUCT FEATURES

- ▶ 实用新型专利技术产品(专利号: ZL.2014.2.0245850.3, 高达145lm/W, 显著提升照明效果的同时, 大大降低用电。
- ▶ 宽电压设计, 供电110~240V, 不受输出影响。
- ▶ 可带应急功能, 应急电池一次充电可使用120分钟以上。无需单独配备应急光源, 直接使用照明光源, 应急功率可调。



专为加油\气站设计

节能
高效
安全
环保

LED 智能控制标识灯箱



夜间效果实拍



夜间效果实拍

智能控制檐口灯箱, 专利技术(实用新型专利号: 2015.2.0834748.1)日耗电量最低可达5.4度。

智能控制品牌柱灯箱, 专利技术(实用新型专利号: 2015.2.0834743.9)日耗电量最低可达2.2度。

智能控制

超低能耗

 **武汉赵德金科技发展有限公司**
WUHAN ZHAODEJIN TECHNOLOGY CO., LTD

地址: 湖北省武汉市汉阳区汉阳大道周湾工业园303号

电话: 027-84680292 手机: 13871560105

传真: 027-84461553 邮编: 430050

Email: 84871036@163.com

服务热线: **400-8030-310**

标准连续出版物号: ISSN1008-2263
CN11-3945/TE

广告许可证号: 京东工商广登字20170081号

定价: 15.00元
全年: 90.00元