★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



OIL DEPOT AND GAS STATION



SHIYOUKU YU JIAYOUZHAN



・广告・

DEFINING | WHAT'S NEXT





油站环境监测系统 (ISD)

超过99%的油气得到有效回收处理 智能调节气液比,为加油站安全运行护航







尤必得石油设备(苏州)有限公司 www.opwglobal.com.cn

ISSN 1008-2263





中国石化集团销售实业有限公司主办

2020第**2**则

第29卷 总第168期 Vol.29 Total No.168



石油库的办证站

SHI YOU KU YU JIA YOU ZHAN

1992 年创刊(双月刊) 第 29 卷 第 2 期 总第 168 期 2020 年 4 月 20 日出版

编委会名誉主任:赵日峰 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: 许卫东 叶慧青 邸春宇 王顺江

委员:

主管:中国石油化工集团有限公司 主办:中国石化集团销售实业有限公司 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

副主编:金万刚 责任编辑:齐凤云

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:廊坊市佳艺印务有限公司

厂址:廊坊市安次区仇庄乡南辛庄村 邮编:065000

标准连续出版物号: <u>ISSN 1008 - 2263</u> 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

本刊对所载图文拥有 版权,未经允许,不得转载 或复侧,本刊保留追诉的 权利。

目 次

	循连技术				
	1	油库腰轮流量计检定遇到的问题及解决办法	张	恒	
	3	一种新型多功能储油罐液位仪的研发 廖四毛	颜素	景国	
	5	储罐地基沉降的预防及处理 任亚丽	安争	を静	
	油	气管道			
	8	浙江成品油管网调度计划编制软件的开发与应用	•••••	•••	
		阮亦根 梁永图	郑ء	た荣	
	加	气站			
	13	液压平推 CNG 子站改造为标准 CNG 子站的建议 ·········	胥治	入文	
信息技术					
	16	基于 IFSF 的综合供能站无卡化支付的总体设计	•••••	•••	
		李汉秋 钱至远 谷金健 李 想	柴真	Ļ琦	
	安	全技术			
	21	区块链技术在油库和加油站安全管理中应用的设想	朱钅	贞龙	
	25	加油站油罐内衬法防渗改造的工艺及安全风险防控	窦	PΘ	
数质量管理					
	29	油气产品质量量化评价方法的构建与应用	••••	•••	
			郑	斌	
	34	提高车用汽柴油检测数据准确性的措施	严玄	こ锐	
	安	全管理			
	37	全员设备管理体系(TPM)在成品油输油管道设备管理中的原	並用	•••	
			刘	平	
	经营管理				
	42	工程企业成本量化管控机制探究	馬女	口稀	
	报道及其他				
	12	中国石化发布全新品牌理念			
	20	《石油库与加油站》杂志投稿须知			
	24	中国石化为复工复产加注放心油			
	33	《石油库与加油站》杂志 2019 年度合订本征订启事			
	41	2020 年第 2 期广告目次			



OIL DEPOT AND GAS STATION

Bimonthly, Started Publication in 1992 Vol. 29, No. 2 No. 168 totally Apr 20, 2020

Honorary Chairman of Editorial Committee: Zhao Rifeng, Xia Shixiang

Chairman of Editorial Committee: Zhang Yi Vice Chairman of Editorial Committee: Tong

Dejiang, Wang Liang, Wang Weimin

Special Consultamts: Xu Weidong, Ye Huiqing, Di Chunyu, Wang Shunjiang

Members: Li Yuxing, Xu Yufeng, Hong Wei, Xu Fubin, Zhao Xunben, Qin Maowei, Nie Shibang, Zhu Jiande, Wang Zhikun, Wang Qin, Zou Enting, Guo Ziqiang, Cao Xiaopan, Li Yiqing, Lu Pinbao, Huang Liuxiong, Shi Jinxian, Fu Tao, Huang Bingli, Zhao Dayi, Xu Hailin, Li Qingjie, Liu Huabin, Tan Yi, Zhong Wei, Tian Shuyuan, Yang Zhen, Feng Peiyu, Feng Yufei, Wang Fei, Qian Jianhua, Shen Lihu, Xu Yongsheng, Liu Sheng, Fu Yibo, Jiang Ning, Bu Wenping, Gao Jinsong, Xie Yun, Du Daolin, Shen Qingqi, Zhou Jiaxiang, Han Jun, Jin Wangang

Director: Zhang Yi

Vice Director: Tong Dejian

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: Jia Yi Printing Co. Ltd of Langfang

Address: Nan xin zhuang village, qiu zhuang township. Langfang

Postcode: 065000

ISSN 1008—2263; CN11—3945/TE

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

Domestic Price: RMB90 per year

Copyright gor all originally published reports.

Contents and Abstracts

STORAGE TECHNOLOGY

1 Problems in Calibration of Roots Flowmeter in Oil Depot and Countermeasures. Zhang Heng.

Abstract: In view of the problems such as the corrosion of the roots flowmeter, the uneven rotation speed of its pointer, and the poor repeatability found in the field verification of the oil depot, based on the brief introduction of the composition, working principle and verification method of the roots flowmeter, the causes of the existing problems are analyzed respectively, and the corresponding solutions are put forward to ensure the normal operation of the roots flowmeter.

Key words: oil depot, roots flowmeter, structure, working principle, verification, maintenance, method. 3 Research and Development of a New Multi - Functional Liquid Level Meter for Oil Tank. Liao Simao, Yan Jingguo.

Abstract: In view of the shortcomings and problems of radar, magnetostrictive and servo liquid level meters, which are commonly used to measure the liquid level and oil temperature, density in oil tanks of oil depots, a new multi - functional liquid level meter is developed, which can be used to accurately measure and display the liquid level, oil temperature, density and oil - water interface in real time. The definition, structure, working principle, measuring process and characteristics of the liquid level meter is The liquid level meter has the introduced. characteristics of high measurement accuracy, safety and reliability, complete functions, simple operation, intelligent operation and network management, and can be used in remote monitoring, showing its better economic and social value.

Key words: oil depot, oil storage tank, new type, liquid level meter, introduction.

5 Prevention and Treatment of Subsidence of Oil Tank Foundation. RenYali, An Xiaojing.

Abstract: The foundation subsidence of steel oil tank is briefly analyzed, and the countermeasures to prevent the subsidence of tank foundation are put forward from three aspects, viz. the location selection of tank, the rational design of tank foundation, and the preventive measures during construction. The main methods of rectifying deviation, such as preloading, drainage,

trenching, jacking, are introduced for foundation subsidence of oil tank. The example of rectifying the deviation of the tank foundation subsidence in an oil depotis introduced in detail from the aspects of comparison and selection of construction schemes, determination of the grouting compaction method, and the specific steps and requirements of the construction of this method. The construction using this method is time – saving, labor – saving, investment saving, simple and effective.

Key words: oil depot, steel storage tank, foundation, subsidence, prevention, treatment.

OIL AND GAS PIPELINE

8 Development and Application of Scheduling Software for Zhejiang Oil Product Pipeline Network. Ruan Yigen, Liang Yongtu, Zheng Rongrong.

Abstract: In view of the heavy work and poor timeliness of manual preparation of pipeline transportation plan due to the complex process and the frequent changes in supply and demand of Zhejiang oil product pipeline network, in order to automatic preparation transportation plan, taking the minimum difference between the result and the planned volume as the objective function, through establishing mathematical model of scheduling plan and the theoretical model of starting the pump, a scheduling software of Zhejiang oil product pipeline network was developed. The software consists of six modules, i. e. plan management, static data, dynamic data, batch plan, pump start scheme and help. The pipeline transportation plan can be prepared by filling in relevant parameters in the interactive interface. The software can automatically generate batch chart, schedule, timetable and scheduling order. With the advantages of short time consuming, stable operation, strong operability, etc., the software can meet the demand of pipeline scheduling, which is proved through 4 years of application.

Key words: oil product, pipeline transportation, scheduling, planning, preparation, software, development, application.

GAS REFUELING STATION

13 Scheme of Transforming Horizontal Hydraulic Type CNG Substation into Standard Substation. Xu Zewen.

Abstract: Based on the brief introduction of the working principle, characteristics of horizontal hydraulic type CNG substation and standard CNG substation, and the necessity of transforming the horizontal hydraulic type substation into the standard substation, the scheme of transforming horizontal hydraulic type substation into standard substation in Chongqing Oil Products Company of SINOPEC is put forward, and the economic analysis of the transformation investment is carried out. The transformation can save the transportation cost,

improve the market competitiveness, reduce the equipment operation failure and potential safety hazard, and improve the enterprise benefit.

Key words: gas fueling station, horizontal hydraulic type substation, transformation, standard station, scheme, analysis.

INFORMATION TECHNOLOGY

16 Overall Design of Card Free Payment System for Integrated Energy Supply Station Based on International Forecourt Standard Forum (IFSF) Communication Protocol. Li Hanqiu, Qian Zhiyuan, Gu Jinjian, Li Xiang, Chai Zhenqi

Abstract: With the rapid popularization of mobile payment technology and the change of consumer payment habits, as well as the rise of new type of comprehensive energy supply station that integrates oil refueling, gas refueling, charging and so on, aiming at the problems of high construction cost, difficult system maintenance, redundant organization and personnel of refueling card system in traditional gas station, based on the International Forecourt Standard Forum (IFSF) communication protocol, integrating POS, smart camera, large screen of dispenser and other hardware equipment, the card free payment system for integrated energy supply station is designed and developed, which can save the construction and maintenance cost of the card system, realize the card consumption. improve the consumption experience, and promote the intellectualization of the integrated energy supply station.

Key words: integrated energy supply station, card free payment system, design, development, forecourt equipment, communication.

SAFETY TECHNOLOGY

21 Ideas of Applying Blockchain Technology in Safety Management of Oil Depot and Gas Station. Zhu Suolong.

Abstract: In view of the problems such as the management difficulty of multi - faceted and wide ranging oil depots and gas stations, various rules and regulations, inadequate security management system and the formality of security assessment, based on the brief introduction of the concept of blockchain technology, its features including decentralization, openness, independence, security and anonymity, and its core technologies, such as distributed ledger, asymmetric encryption, consensus mechanism and smart contract, the idea of the applying blockchain technology in the safety management of oil depots and gas stations is put forward: the first is to use the distributed bookkeeping technology of blockchain to solve the daily account records in the safety management and realize the real - time records of process management; the second is to use blockchain technology to mine and identify the safety risks and hidden dangers in the operation; the third is to apply the effective traceability of blockchain in the performance appraisal of safety management.

Key words: oil depot, gas station, blockchain technology, security management, application, idea.

25 The Anti – seepage Transformation Process Using Oil Tank Lining Method in Gas Station and Safety Risk Prevention. Dou Yang.

Abstract: The processes and composite materials of lining methods, i. e., Duopu technology and Phoenix system technology, used in the anti – seepage transformation of underground oil tank of gas station are briefly introduced. And the safety control measures in the process of transformation construction are put forward, such as wearing personal protective equipment correctly, strengthening on – site supervision and control, checking the construction personnel strictly, reviewing the construction scheme strictly, and standardizing the procedures related to work permit.

Key words: gas station, oil tank, lining method, construction, process, material, safety, prevention and control.

QUANTITY AND QUALITY MANAGEMENT

29 Construction and Application of Quantitative Evaluation Method for Oil Products Quality. Wen Guochao, Chen Haolin, Zheng Bin.

Abstract: Taking the purchase of gasoline, diesel, fuel oil and liquefied petroleum gas and other oil products by a company as an example, based on the characteristics of oil product quality indicators, a quantitative evaluation method of oil products quality is established. The quality indexes of oil products are divided into three categories, viz. "nonadjustable key indexes", "adjustable key indexes" and "minor indexes". The weight, quantitative scoring standard and evaluation rules of each index are determined, and the evaluation effect is analyzed. This method provides an accurate basis for the decision – making of quality control in oil products purchase, and can be used to prevent quality risk and improve the level of refined operation management.

Key words: oil products, quality, management, quantification, evaluation, method, construction, application.

34 Measures to Improve the Detection Accuracy of Vehicle Gasoline and Diesel. Yan Wenrui.

Abstract: Based on the brief description of the significance of improving the detection accuracy of vehicle gasoline and diesel, the specific measures to improve the detection accuracy of vehicle gasoline and diesel were put forward, such as establishing and improving the oil quality detection system, standardizing the sampling operation, strengthening the control of the detection instruments, selecting accurately the detection standards and methods, selecting equipment the appropriate environmental conditions, controlling reasonably the quality of test results, and strengthening the management of test reports.

Key words: improvement, vehicle gasoline, vehicle

diesel, quality, testing, accuracy, measures.

SAFETY MANAGEMENT

37 Application of Total Productive Maintenance (TPM) in Equipment Management of Oil Product Pipeline. Liu Ping.

Abstract: In view of the problems existing in the equipment management of Huazhong Company Fuzhou Oil Transportation Management Office of SINOPEC Sales Co., Ltd., such as the prominent phenomenon of "Low standards, old problems, bad habits" in field equipment management, inadequate implementation of professional management specifications and technical standards. imperfect control mechanism abnormalities and faults, low participation of equipment maintenance staff, and low staff quality, based on the brief introduction of the definition and characteristics of total productive maintenance (TPM) system, the ideas of using systematic thought, building all staff equipment management system and practicing lean management concepts to promote the implementation of TPM system is put forward for Fuzhou Transportation Management Office. From the aspects of equipment standardization and rectification daily cleaning management. management. maintenance management, point inspection and repair management, equipment fault and defect maintenance management, technical transformation management, improvement of informationization level of equipment management, improvement of equipment maintenance and convenience, as well as the operation and correction of the system, the main methods of implementing the system are introduced in detail. The main results of the implementation of the system are achieved, including the intrinsic safety of equipment, the standardized field construction, the standardized post construction, the initially - standardized team construction.

Key words: oil product, oil pipeline, total productive maintenance (TPM), application, introduction.

OPERATION MANAGEMENT

42 Exploration on Cost Quantitative Control Mechanism of Engineering Enterprises. Yan Ruxi.

Abstract: In view of the problems caused by the improper decomposition of cost units in cost management engineering enterprises, such as management, difficulty in realizing quantitative control due to the deficient cost control index, and weak guiding significance for the implementation of engineering projects because of the backward cost control, the idea and main content of cost control of engineering enterprises are put forward, viz. detailed decomposition of cost units to lay a foundation for fine cost management, improving the cost management index system and assessment on cost analysis, strengthening the cost assessment management to implement cost reduction and efficiency increase.

Key words: engineering, enterprise, cost, management, exploration.

LED油站气站防爆灯区

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。



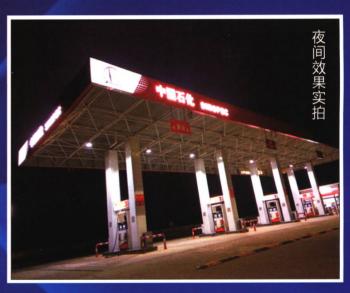
专为加油\气站设计

安全环保

LED 智能控制标识灯箱 L



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

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彭家岭378号西门

电话:027-84680292 手机:13871560105

传真:027-84461553 邮编:430050

Email:84871036@163.com

服务热线:400-3030-310

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