ISSN 1008-2263 CN 11-3945/TE

OIL DEPOT AND GAS STATION



SHIYOUKU YU JIAYOUZHAN



・广告・

DEFINING | WHAT'S NEXT



优必得石油设备(苏州)有限公司 www.opwglobal.com.cn

 【中国工厂
 【上海分公司
 北京分公司
 「广州分公司

 电话: 0512-62745328
 【电话: 021-24112600
 电话: 010-64450699
 【电话: 020-28865785





2023第 1 则

第32卷 总第185期 Vol.32 Total No.185



石油库的加油站

SHI YOU KU YU JIA YOU ZHAN

1992 年创刊(双月刊) 第32 券 第1期 总第 185 期 2023 年 2 月 20 日出版

强

编委会名誉主任:陈成敏 李玉杏 编委会主任:冯 云

副主任:贾文利 王剑波 委员:

许渝峰 洪 威 张 毅 吕 伟 周铭德 王新胜 王 宏 王琴 檀 飞 赵霞敏 秦茂伟 向浩萍 吴世胜 邹伟海 卢品宝 蔡文东 赵 军 杜嘉良 陈智勇 蒋必森 陈志清 李国营 刘华斌 夏凤梧 查 云 史永辉 杨 震 冯培育 李 辉 方向明 王英杰 计 平 李新明 杨慎军 刘 华 林怀广 王维民 江 宁 武 全 谢慧生 理 [於 赵运林 张少宁 朱红波 周金广 赵志海 赵 亮 金万刚

执行董事、法定代表人、经理:冯 云 监事:贾文利

主编、副经理:王剑波 常务副主编、常务副经理:金万刚 责任编辑:齐凤云

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》杂志社有 限公司

国内发行:《石油库与加油站》杂志社有 限公司

地址:北京市东城区广渠家园6号楼 320 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: CN 11 - 3945/TE ISSN 1008 - 2263

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 或复制,本刊保留追诉的 权利。

目 次

储运技术			
1	加油站双层罐与防渗池+单层罐工艺的技术对比分析		侯

油气管道 4 贵渝成品油管道清管污油处理技术 …………… 邵 奇

7 某成品油管道管输超耗原因分析及控制措施 ………… 张 信息技术

10 基于视频识别技术的加油站数智化应用实践研究 ……… 高 望 环境保护

15 加油站卸油过程中挥发性有机物(VOCs)的排放及控制 … 王 数质量管理

18 基于检测实践的打非治违油品的危害分析与建议…………… 黄俊翰 曾勇昭 陈先银 黄运宇 于林华

柴油中硝酸酯型十六烷值改进剂检测方法的研究 ……………… 21 陆元华 孙国斌 黄 铮

风量法测定柴油十六烷值不确定度的评估 … 曹兴志 24 安全管理

28 部分石化企业本质安全存在的问题及对策………… 贾文利

信息化技术在油品销售企业"三基"管理中的应用探索 … 檀 35

38 关于提升综合加能站应急保障功能的探讨……… 史永辉 伟 经营管理

某油品销售企业制度体系调整优化的探索与实践………………

报道及其他

- 中国石化 HSE 方针、愿景目标、承诺和管理理念 17
- 中国石化 HSE 安全生产禁令、生态环境保护禁令和九大保命条款 34
- 40 2023 年第1期广告目次
- 《石油库与加油站》杂志 2022 年度合订本征订启事 44



OIL DEPOT AND GAS STATION

Bimonthly, Started Publication in 1992 Vol. 32, No. 1 No. 185 totally Feb 20, 2023

Honorary Chairman of Editorial Committee: Chen Chengmin, Li Yuxing

Chairman of Editorial Committee: Feng Yun Vice Chairman of Editorial Committee: Jia Wenli, Wang Jianbo

Members: Xu Yufeng , Hong Wei, Zhang Yi, Lü Wei, Zhou Mingde, Wang Xinsheng, Wang Hong, Wang Qin, Tan Fei, Zhao Xiamin, Qin Maowei, Xiang Haoping, Wu Shisheng, Zou Weihai, Lu Pinbao, Cai Wendong, Zhao Jun, Du Jialiang, Chen Zhiyong, Jiang Bisen, Chen Zhiqing, Li Guoying, Liu Huabin, Xia Fengwu, Cha Yun, Shi Yonghui, Yang Zhen, Feng Peiyu, Li Hui, Fang Xiangming, Wang Yingjie, Ji Ping, Li Xinming, Yang Shenjun, Liu Hua, Lin Huaiguang, Wang Weimin, Jiang Ning, Wu Quan, Xie Huisheng, Liu Ye, Zhao Yunlin, Zhang Shaoning, Zhu Hongbo, Zhou Jinguang, Zhao Zhihai, Zhao Liang, Jin Wangang

Director, Manager: Feng Yun

Supervisor: Jia Wenli

Editor-in-Chief Vice Manager: Wang Jianbo

Vice Editor-in-Chief Vice Manager: Jin Wangang

Editor-in-Charge: Qi Fengyun

Responsible Department: China Petrochemical Corpora-

tion (SINOPEC)

Sponsor: SINOPEC Sales Company

Publisher: Journal Press of Oil Depots and Gas Stations Co., Ltd **Distributor** (**Domestic**): Journal Press of Oil Depots and

Gas Stations Co., Ltd

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 Dis-

trict, Beijing

Domestic Price: RMB90 per year

Copyright gor all originally published reports.

Contents and Abstracts

STORAGE TECHNOLOGY

1 Technical Comparison and Analysis of Double - Layer Tank and Anti - Seepage Tank + Single - Layer Tank Process in Gas Station. Hou Qiang.

Abstract: The anti – seepage technology of the double - layer tank and the anti - seepage tank + the single - layer tank in the gas station are introduced in detail from the aspects of material and construction technology, and the anti – seepage technology of the double – layer tank and the anti – seepage tank + single – layer tank is compared and analyzed from the aspects of anti – seepage performance and construction cost, and the suggestions of using the anti - seepage technology of the double - layer tank as far as possible are put forward, which can provide a reference for the antiseepage construction of the oil tank in the gas station. **Key words:** gas station, double – layer tank, anti –

seepage tank + single - layer tank, construction, comparison, analysis.

OIL AND GAS PIPELINE

4 Waste Oil Cleaning Treatment Technology for Guiyang—Chongqing Oil Product Pipeline. Shao Qi.

Abstract: The generation and pigging process of cleaning waste oil of Guiyang—Chongqing oil product pipeline is briefly described. On the basis of briefly introducing the thermal sedimentation method, centrifugal separation method, ultrasonic method and filtration method mainly used for pigging waste oil of oil product pipeline, the filtration method with the advantages of low cost, low energy consumption, simple process and relatively complete purification were emphasized. The working principle of the waste oil filtration device is introduced, and the problems existing in the operation of the filtration device are pointed out, such as the need for special personnel to be on duty, the high cost of replacing the filter element, the poor effect of the filtration method on emulsified oil, and the redundant connection of the device pipeline. Some improvement suggestions are put forward, viz., realizing the remote transmission function of data such as differential pressure, optimizing the process flow and the number of filter elements, integrating the treatment of emulsified oil, and improving the connection mode of inlet and outlet pipelines of the filtration device.

Key words: oil product, pipeline, pigging, waste oil, treatment, technology.

7 Cause Analysis and Control Measures of Excess Loss of an Oil Product Pipeline. Zhang Lei.

Abstract: The causes of excess loss of an oil product pipeline are analyzed. Firstly, the internal leakage of the valve leads to the empty pipe of the pipeline between stations. Secondly, the uploaded data is inaccurate due to the mutual channeling of oil products between oil tanks in the uploaded oil depot. Thirdly, there is a large deviation between the automatic metering system and the manual ruler during the uploading and downloading of the oil depot. Fourthly, the error of the flowmeter is caused by the unreasonable installation position or mode, the readings variation of the flowmeter during shutdown caused by the micro flow of pipeline liquid, the zero drift of the flowmeter, medium temperature and pressure or other environmental factors. Therefore, corresponding control measures are put forward.

Key words: oil product, pipeline, transportation, excess loss, causes, analysis, countermeasures.

INFORMATION TECHNOLOGY

10 Research on Application of Digital Intelligence in Gas Stations Based on Video Recognition Technology. Gao Wang.

Abstract: In view of the problems in the traditional video monitoring system of the gas station that the customer information integrity needs to be improved, the response of the gas station needs to be strengthened, the convenience store management function needs to be improved, and the security warning needs to be developed, it is proposed to further play the equipment efficiency based on the existing video recognition technology, and expand the existing functions into streaming media collection, digital transformation, intelligent analysis, precision marketing, risk warning and other functions by using computer vision technology and business data analysis, to realize the improvement of customer information, intelligent marketing guide, improving management efficiency, reducing operational risk, and promoting the intelligent upgrading of gas stations from data collection, marketing analysis, efficient service, safety control and other aspects, so as to improve the level of business services, and promote the high - quality development of enterprises.

Key words: gas station, informatization, video recognition technology, expansion, digital intelligence technology, application, practice.

ENVIRONMENTAL PROTECTION

15 Emission and Control of Volatile Organic Compounds (VOCs) during Unloading at Gas Stations. Wang Lei.

Abstract: The reasons why the volatile organic compounds (VOCs) emissions exceed the standard in the unloading process of some gas stations are analyzed. Therefore, the improvement measures are proposed as follows: Firstly, a new type of inspector is installed and used to realize the whole process of airtight oil unloading in the gas station. Secondly, good airtightness of the oil vapor recovery system of the tanker should be ensured. Thirdly, the inspection of the airtightness of oil tank trucks and rubber hoses should be improved. Fourthly, oil unloading during high temperature period should be avoided.

Key words: gas station, oil unloading, volatile organic compounds (VOCs), emission, control.

QUANTITY AND QUALITY MANAGEMENT

18 Hazard Analysis and Suggestions on Governing Illegal oil Products Based on Testing Practice. Huang

Junhan, Zeng Yongzhao, Chen Xianyin, Huang Yunyu, Yu Linhua.

Abstract: On the premise of briefly introducing the current situation of fighting against illegal activities in oil products market, a statistical analysis of the index data of the items related to the detection of motor gasoline and diesel seized in a place in Guangxi in the past three years is carried out, the harmfulness of fake and inferior oil products are pointed out, and the relevant suggestions for governing illegal oil products are put forward, such as increasing the publicity, strengthening the efforts to fighting activities and improve the effect of rectification, and improving the oil detection ability and improving the efficiency of governing illegal oil products.

Key words: oil product, market, rectification, fake and inferior, oil sample, detection, analysis, suggestions.

21 Study on the Detection Method of Nitrate Cetane Number Improvers in Three Diesel Fuels. Lu Yuanhua, Sun Guobin, Huang Zheng.

Abstract: According to Appendix B in the national standard "Automotive Diesel Fuel" (GB 19147 – 2016), the content of nitrate cetane number improver in diesel fuel was tested by infrared spectroscopy, chemiluminescence, and quinone compound indicator methods. The principles, methods, advantages and disadvantages, and detection precautions of the three detection methods were introduced respectively, providing a reference for laboratory determination of nitrate cetane number improver content in diesel fuel under different conditions.

Key words: diesel, nitrate, cetane number, improver, detection, method, research.

24 Evaluation of Uncertainty in Measurement of Cetane Number of Diesel Fuel by Air Volume Method. Cao Xingzhi.

Abstract: According to "Standard test method for determining cetane number of diesel fuel. Airflow regulation (GB/T 33298—2016)", using a special cetane number machine with airflow regulation, on the basis of accurately measuring the cetane number of diesel fuel, the standard uncertainty introduced in the repeated measurement of samples and the uncertainty introduced in the sub standard fuel configuration are analyzed and coupled into the total standard uncertainty. The experimental process, experimental conditions, main methods, sources and calculation models of uncertainty in the determination of cetane number of diesel fuel by airflow method are briefly introduced. The sources of uncertainty components introduced in the determination process are analyzed, calculated and evaluated, and the result of the determination of cetane number of diesel fuel by airflow method is 54.67 with the expanded uncertainty of 0.44. Some points for attention in the uncertainty experiment of diesel cetane number determination by airflow method are put forward.

Key words: airflow method, determination, diesel, cetane number, uncertainty, method, evaluation.

SAFETY MANAGEMENT

28 The Problems and Countermeasures of Intrinsic Safety of Petrochemical Enterprises. Jia Wenli

Abstract: On the basis of pointing out the problems existing in the intrinsic safety of petrochemical enter-

prises, such as lax management, weak "three basic" work, inadequate professional management, poor risk management and control, the corresponding countermeasures to improve the intrinsic safety of petrochemical enterprises are put forward. In the aspect of improving the intrinsic safety of management. the first is to adhere to the sense of leadership to play the role of the leadership core to promote; the second is to adhere to the decomposition at all levels to effectively implement the post blame; the third is to adhere to the grid management, technical specialization, site standardization and behavior standardization to compact the safety responsibilities of all staff: the fourth is to adhere to double prevention to control risks throughout the process: the fifth is to adhere to prevention and control at the source to strictly control the risks of construction projects; the sixth is to adhere to strict management of cultivate high - quality contractors. In terms of improving the intrinsic safety of personnel, the first is to strengthen personnel and create a strong safety management line; the second is accurate training to improve personnel quality; the third is strict and meticulous management and control of personnel operation risk; the fourth is to adhere to the "135" treatment and strengthen the construction of emergency response capacity. In terms of intrinsic safety of lifting device: the first is the intrinsic safety of lifting equipment; the second is to strengthen the continuous compliance inspection and rectification: the third is strict and stable process management; and the fourth is to promote the construction of informatization, digitalization and intelligence.

Key words: petrochemical, enterprise, safety, problems, countermeasures.

35 Application of Information Technology in "Three Basic" Management of Oil Sales Enterprises. Tan Fei. Abstract: Taking SINOPEC Jiangxi Oil Product Company as an example, the importance of the "three basic" work of grass - roots construction, basic work and basic skill training in the safety management of petrochemical enterprises is introduced, and the problems existing in the "three basic" management in the safety management are pointed out that the grass roots team construction cannot meet the needs of enterprise reform and development, the basic work cannot meet the needs of the operation of the enterprise HSE management system, and the basic skill training of employees cannot meet the needs of high - quality development of enterprises. The idea of improving the "three basic" management with information technology are put forward, such as promoting the implementation of the post responsibility system of all staff and strengthening the construction of grass - roots teams, promoting the implementation of grass - roots work and strengthening the construction of "three standards" at the grass - roots level, and promoting the implementation of basic skills training and strengthening the skills and literacy of grass - roots employees. The contents and effects of information technology to improve the "three bases" management are introduced in detail, such as carrying out safety management informatization to build a comprehensive HSE management evaluation system, deepening the HSE rating system to promote the implementation of the overall responsibility system, establishing a risk early warning information system to strengthen the standardized operation of grass - roots on - site staff, increasing the use of equipment maintenance platform to improve the serviceability rate of equipment at the grass - roots level, and applying 3D simulation system to carry out skill training for employees.

Key words: oil sales enterprises, "three basic" management, safety management, problems, informatization, technology, application.

38 Discussion on Improving the Emergency Support Function of Integrated Energy Station. Shi Yonghui, He Wei.

Abstract: Through thinking about the role of the integrated energy station of SINOPEC Inner Mongolia Hohhot Oil Product Company in emergency support during the COVID - 19, according to relevant laws and regulations such as the "Emergency Response Law" of the People's Republic of China and relevant theories on accident causes, and on the basis of pointing out that the integrated energy station has a complete safety management system, natural geographical advantages and hardware conditions for emergency support, the possibility and plan of integrating the integrated energy station into the urban comprehensive disaster prevention system are put forward, viz., taking the initiative to integrate into the government emergency disaster prevention system to standardize the organizational behavior, improving the function of integrated energy station, improving the material allocation of the comprehensive energy station, giving full play to the role of contactless APP functions such as "one button refueling" and "one button to car", and improving the emergency plan of the integrated energy station, which can provide a reference for the integrated energy station to be included in the urban emergency security system.

Key words: improvement, integration, energy station, emergency, guarantee, function, discussion.

OPERATION MANAGEMENT

41 Exploration and Practice of Adjustment and Optimization of the System of Oil Product Sales Enterprise. Fan Yue. Sun Meng.

Abstract: In view of the problems of a certain oil product sales enterprise, such as the untimely dynamic updating of the system, the obsolete and outdated provisions of some systems, the need to improve the standardization, integrity and progressiveness of the system, the division of the system by departments and blocks, the weak integration, and the untimely undertaking of the group company's system, the optimization and adjustment of the system were carried out. The main approaches are as follows: The first is to set goals for problems; the second is to clarify the train of thought by comparing the objectives; the third is to establish institutions to promote implementation; the fourth is to take multiple measures and implement them in a standardized manner. Remarkable achievements have been made in the adjustment and optimization of enterprise systems, which can provide a reference for the adjustment and optimization of relevant enterprise systems. **Key words:** oil sales enterprise, system, adjust-

ment, optimization, exploration, practice.