



美国化学文摘(CA)收录期刊
美国《乌利希期刊指南》收录期刊
俄罗斯《文摘杂志》收录期刊
中国科技核心期刊

ISSN 1000-8241
CN 13-1093/TE

2012.11 第31卷

11

油气储运

Oil & Gas Storage and Transportation

主办单位：中国石油天然气股份有限公司管道分公司



大型 LNG 储罐内罐稳定性设计方案比选
储罐底板下表面阴极保护系统设计的常见问题
利用中小型船舶运输 LNG 的可行性
大口径长输油气管道非开挖穿越的适应性



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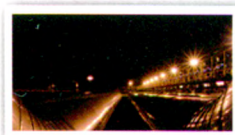
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期刊基本参数: CN 13-1093/TE*1977*m*A4*88*zh + en*P*¥18.00*3500*21*2012-11*zn



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..... Chen Gang, Guo Yi, Yu Tao, et al



完整性 / 标准规范

/ 完整性 /

801 在役油气管道周边爆破作业风险分析

戴联双, 张海珊, 孟国忠, 等

保护物爆破振动质点振动速度主要受爆破单响最大药量 $Q_{\max}$ 、距离 R 以及常数 k 、 α 的影响

804 燃气输配管道泄漏事故类型及其控制措施

黄郑华

SCADA 和 GIS 两大系统应有机结合, 充分利用各自的信息数据, 发挥信息化管理的优异功能, 提高燃气企业的管理水平

808 油气管道通径检测器技术研究进展

代莉莎, 张仕民, 朱霄霄, 等

速度控制、检测精度、可靠性以及后期数据处理与分析是通径检测器检测技术的关键所在

814 模糊综合风险评价方法在 LNG 加注站的应用

贺焕婷, 黄坤, 惠贤斌, 等

放空吹扫接头长时间使用导致的放散及吹扫气体作

用减弱, 卸液时槽车发动机未关闭, 以及槽车周围环境的危险性因素均可能导致一定的安全风险

/ 标准规范 /

819 穿越管段地面试压验收标准修改意见

葛延超, 徐效华, 张严甫, 等

进行地面管道压力试验时, 注水完成至升压开始的温度稳定时间, 最少为 8 h; 升压结束至强度压力试验开始的压力平衡时间, 最少为 30 min

823 国内外油气管道工艺运行标准差异分析

李默, 曹鹏飞, 潘腾, 等

国外标准关于“最大许用操作压力值(MAOP)变更”内容的规定非常详细, 包括设计工况变更时需要进行评估和审查的项目及 MAOP 的审查周期



INTEGRITY / STANDARD & CODES

/INTEGRITY/

801 Risk analysis of blasting operations around in-service oil and gas pipelines

Dai Lianshuang, Zhang Haishan, Meng Guozhong, et al

Protection blasting vibration particle vibration velocity is mainly affected by the maximum single ring dose Q_{max} , distance R and constants of k and α .

804 Leak accident types of gas distribution pipeline and its control measures

Huang Zhenghua

SCADA and GIS systems shall make a dynamic integration to make full use of respective information data and play excellent information management functions so as to improve the management level of gas enterprises.

808 Research and progress in calibre detector technology of oil and gas pipeline

Dai Lisha, Zhang Shimin, Zhu Xiaoxiao, et al

Speed control, detection accuracy, reliability as well as post data processing and analysis are the key to calibre detector technology.

814 Application of fuzzy comprehensive risk evaluation method in LNG filling station

He Huanting, Huang Kun, Hui Xianbin, et al

Reduction of diffusion and purging effects caused by

long-time use of venting and purging joints, no shutdown of tanker engine in the case of liquid unloading and risks of environment around the tanker may all lead to certain safety risks.

/STANDARD & CODES/

819 Suggestions for modification of acceptance criteria for ground pressure test of crossing pipeline section

Ge Yanchao, Xu Xiaohua, Zhang Yanfu, et al

In the ground pipeline pressure test, temperature stabilization time from water filling completion to pressure rise start is at least 8 hours, and pressure equilibration time from pressure rise completion to strength pressure test start is at least 30 minutes.

823 Differences of the process operation standards of inland and foreign oil/gas pipeline

Li Mo, Cao Pengfei, Pan Teng, et al

Regulations about the maximum allowable operating pressure (MAOP) change in foreign standards are written in detail, including the items to be evaluated and reviewed in case of the change in design condition as well as review cycle of MAOP.



设计计算 / 防腐保温 / 节能环保

/ 设计计算 /

827 天然气场站工艺系统技术改进

于东升,郭东升,江涛,等

由于调压阀产生的节流噪音与超声波流量计换能器所接收的信号频率重合的可能性极大,因此减小到达计量区的干扰噪音是解决计量偏差过大问题的关键

830 大型 LNG 储罐内罐稳定性设计方案比选

扬帆,张超,邓青

虽然安装锚固带,可使内罐在地震工况下保持稳定,但考虑到施工便利和节约材料,无锚固带 LNG 储罐相对更有优势

/ 防腐保温 /

833 储罐底板下表面阴极保护系统设计的常见问题

郭超,王璠,俞龙,等

阳极网应避免与罐底板或积水坑、环墙钢筋等金属构件接触,以防止阴阳极发生短路和阴极保护电流的额外消耗

837 粘弹体防腐材料研制及其应用

袁春,李建忠,王颖,等

将粘弹体胶带缠绕于干净钢管表面,使粘弹体胶带无褶皱,保证粘弹体胶带与钢管表面充分接触以达到完全粘结

/ 节能环保 /

841 陕京天然气管网系统的节能措施

宋明智,程凤亭

运用能源流动热平衡、能量梯阶利用和热力学值等进行节能措施分析,以期达到系统全方位节能效果



DESIGN & CALCULATION / CORROSION CONTROL & INSULATION / ENERGY SAVING & ENVIRONMENTAL PROTECTION

/DESIGN & CALCULATION/

827 Technological improvement of process system in gas compressor station

Yu Dongsheng, Guo Dongsheng, Jiang Tao, et al

Throttling noise from pressure control valve is likely to coincide with signals received by the ultrasonic flowmeter transducer in the frequency, so it is the key to reduce the interfering noises to the metering area to reduce large error in measurement deviation.

830 Selection of design scenario for inter tank stability of large-scale LNG tank

Yang Fan, Zhang Chao, Deng Qing

Although the anchoring belt can make the inter tank maintain stable in the seismic condition, anchoring belt-free LNG tank has advantages of construction convenience and material conservation.

/CORROSION CONTROL & INSULATION/

833 Common problems with cathodic protection system design for the lower plate surface of tank bottom

Guo Chao, Wang Fan, Yu Long, et al

The anode mesh shall avoid contact with metal components such as the tank bottom plate, sump and

ring wall steel to prevent short-circuit between anode and cathode and additional cathodic protection current consumption.

837 Development and application of viscoelastic anti-corrosion materials

Yuan Chun, Li Jianzhong, Wang Ying, et al

Viscoelastic adhesive tape is wound on the surface of clean steel pipe, wrinkle free, to ensure full contact between viscoelastic tape and steel pipe surface so as to reach full adhesion.

/ENERGY SAVING & ENVIRONMENTAL PROTECTION/

841 Energy saving measures of Shaanxi-Beijing Natural Gas Pipeline System

Song Mingzhi and Cheng Fengting

Thermal equilibrium of energy flow, energy cascade utilization, thermodynamic energy value is used to analyze energy saving measures to obtain comprehensive energy saving effects of the system.



问题讨论 / 检测技术

/ 问题讨论 /

845 利用中小型船舶运输 LNG 的可行性

付海泉, 屈晟, 尹丹霓, 等

利用中小型 LNG 船舶从大型 LNG 接收站向沿海以及受内河航道水位、桥梁影响的沿江地区转运 LNG, 可促进 LNG 运输模式的多元化

850 姜孟柴油管道减阻剂加注方案

张宁, 吴杰, 林森, 等

对于长度较短的管道, 可提前利用管输油品将减阻剂充分溶解分散, 再按比例注入管道, 从而缩短起效时间, 达到减阻增输的目的

852 油气储运工程项目后评价指标体系及方法

王丽, 刘丽霞, 陶勇寅, 等

根据项目的特点科学地选择评价指标体系、构造评价判断矩阵, 并尽可能地组织有管理和技术经验人员对评价指标进行评价、打分, 以获得更为科学、准确的评价结果

/ 检测技术 /

857 海底管道检测信息管理系统的设计与实现

李广政, 唐远彬

为形象直观地表达海底管道的检测数据, 采用 GIS 新技术和数据库技术对检测数据进行了有效管理, 并在此基础上实现了海底管道及其附近海床相对状态的三维表达

861 西气东输二线遂川江顶管穿越施工监测

张爽, 李默, 陈海雨, 等

泥水仓内的水压与土压共同平衡顶管机土层的土压, 以达到泥水、土压双重平衡的目的, 从而最大限度地减小地面沉降



QUESTION & DISCUSSION / DETECTION TECHNOLOGY

/QUESTION & DISCUSSION/

845 Feasibility of LNG shipping by small or medium-sized ships

Fu Haiquan, Qu Sheng, Yin Danni

LNG transmission by small or medium-sized LNG ships from large-scale LNG receiving stations to regions along the Yangtze River is affected by the inland waterways water level, and bridges can promote diversification of LNG transport modes.

850 Drag reduction agent injection program in Loumeng Diesel Pipeline

Zhang Ning, Wu Jie, Lin Sen, et al

For shorter pipeline, diesel can be used in advance to fully dissolve and disperse DRA, which will be injected into the pipeline proportionally, thereby reducing action time and reaching the purpose of drag reduction and throughput increase.

852 Post-evaluation index system and method for oil & gas storage and transportation project

Wang Li, Liu Lixia, Tao Yongyin, et al

Based on the characteristics of projects, it is necessary to scientifically select an evaluation index system, build an evaluation and judgement matrix and organize the

personnel with management and technology experiences to evaluate and score evaluation indexes as far as possible so as to obtain a more scientific and accurate evaluation result.

/DETECTION TECHNOLOGY/

857 Design and implementation of inspection information management system for submarine pipeline

Li Guangzheng and Tang Yuanbin

For intuitive expression of submarine pipeline inspection data, new GIS technology and database technology are used for effective management of inspection data, three-dimensional expression of relative status of the submarine pipeline and its nearby seabed is realized.

861 Monitoring of pipe jacking crossing Suichuan River in the 2nd West-to-East Gas Pipeline

Zhang Shuang, Li Mo, Chen Haiyu, et al

Water pressure and soil pressure in the muddy water sump jointly balance the soil pressure of pipe pusher soil layer to reach double balance of muddy water pressure and soil pressure so as to minimize soil settlement.



实验研究 / 施工技术 / 计量技术

/ 实验研究 /

865 RC1e 和 ReactIR 测试四氢呋喃形成水合物过程

贾子麒,董姣,李青蕊,等

19%的四氢呋喃水溶液体系在 -4°C 形成水合物晶核,并因相变而释放大量的热,造成溶液体系温度上升

868 复合聚氨酯海底保温管道试制

闫嗣伶,蒋晓斌,张晓灵,等

管端封堵装置的作用主要为支撑钢管、密封及管端成型,其由聚氨酯弹性体材料制成,封堵坡度为 45° ,伸缩量可以自行调节,以便控制管端预留

/ 施工技术 /

871 大口径长输油气管道非开挖穿越的适应性

张宝强,焦如义,袁会赞,等

比选非开挖穿越方式时,通过地质适应性将定向钻与顶管和盾构进行区分,若地质条件适合,应首选定向钻穿越,顶管和盾构次之

/ 计量技术 /

874 成品油岸罐交接计量误差的产生原因及应对措施

何晓林

由于罐体变形、地基的不均匀沉降等原因,经检定的立式罐容量表与实际容量的误差经常超过规范所规定的误差范围

877 兰郑长管道超声波流量计测量误差的修正

陈刚,郭祎,于涛,等

对测量数据的修正,可采用标准管容进行对比修正,或通过超声波流量计厂家提供的流量计算机进行自动补偿修正



EXPERIMENT & RESEARCH / CONSTRUCTION TECHNOLOGY / METERING TECHNOLOGY

/EXPERIMENT & RESEARCH/

865 Hydrate formation process of tetrahydrofuran tested by RC1e and ReactIR

Jia Ziqi, Dong Jiao, Li Qingrui, et al

19% tetrahydrofuran aqueous solution system forms hydrate crystal nucleus at -4°C and releases a large amount of heat due to the phase change, causing temperature rise of the solution system.

868 Prefabrication of composite polyurethane seabed insulation pipeline

Yan Siling, Jiang Xiaobin, Zhang Xiaoling, et al

Pipe end plugging device is mainly used to support steel pipe, seal and form pipe ends. The device is made of polyurethane elastomer materials with plugging slope of 45° and the stroke can be self-regulating in order to control reserved pipe ends.

/CONSTRUCTION TECHNOLOGY/

871 Adaptability of trenchless crossing for large-diameter long-distance oil and gas pipeline

Zhang Baoqiang, Jiao Ruyi, Yuan Huizan, et al

In the selection of trenchless crossing method, geology adaptability distinguishes the directional drilling from the

pipe jacking and shield-driven tunneling. If geological conditions are suitable, the directional drilling crossing will be preferred, followed by the pipe jacking and shield-driven tunneling.

/METERING TECHNOLOGY/

874 Cause of metering error in shore-tank custody transfer of refined oil and solutions

He Xiaolin

Due to the tank deformation, uneven foundation settlement and other causes, the deviation between the verified capacity meter of vertical tank and actual capacity often exceeds the specified error range.

877 Correction of metering error for ultrasonic flowmeter in Lanzhou-Zhengzhou-Changsha Products Oil Pipeline

Chen Gang, Guo Yi, Yu Tao, et al

For correction of the measured data, standard pipeline capacity can be used for contrast correction, or a flow computer provided by the ultrasonic flowmeter manufacturer is used for automatic compensation correction.