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石油库与加油站

SHIYOUKU YU JIAYOUZHAN

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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
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Contents and Abstracts

Abstract: Based on the brief introduction of the derusting technologies commonly - used in oil tank cleaning operation, such as manual derusting, semi - mechanical polishing, spray derusting, chemical derusting, and high - pressure water jet, the development situation, derusting mechanism, derusting parameters of ultrasonic derusting technology and its application in armored equipment, medical equipment and other industrial fields are introduced. According to the ultrasonic derusting mechanism, characteristics of oil tanks and related standards, the application of ultrasonic derusting technique in oil tank is proposed, providing a new way for the innovation of oil tank derustig technique.

Key words: oil product, tank, derusting, ultrasonic, application, idea.

Abstract: According to the status that the manual calculation of gas (liquid) inventory in gas station is more complicated, and the related computer software has not been developed, the advice are proposed using approximation method for calculation of gas (liquid) inventory daily, and using the standard method for the calculation of inventory at the end of each month, respectively. And some examples are given to verify the method, the ideal results are achieved, which can improve the measuring accuracy and work efficiency of gas station.

Key words: gas station, gas (liquid) inventory, calculation method, discussion.

Abstract: The structure, working principle, performance curve and rational allocation of centrifugal pump on oil pipeline are introduced. The common faults of oil pump are analyzed, such as improper start – up, no liquid discharge, no fluid sucked – in, flow reducing, pressure dropping, power consumption and motor temperature increasing, shock or abnormal sound, overheated bearing, mechanical seal leakage, rotor wobble and water hammer, and the corresponding treatment methods are presented, providing a guarantee to ensure the normal operation of oil pump.

Key words: centrifugal oil pump, structure, working principle, failure, analysis, solution.

SAFETY TECHNOLOGY

Abstract: The definition of safety assessment is introduced, the concept and main content of 6 methods commonly used in safety assessment of oil depot are reviewed, viz. the safety check list method, the failure modes and effects analysis method, the qualitative analysis method of fault tree, the fire and explosion index assessment system of DOW Chemical Company, the six – stage evaluation method, and the fuzzy comprehensive assessment method. The 6 methods are analyzed and compared from the aspects of the qualitative and quantitative results, assessment objectives, scope, advantages and disadvantages, and effect evaluation. Some principles and suggestions on selecting oil depot safety assessment method are presented, which can provide a reference for the oil depot safety assessment.

Key words: oil depot, safety assessment, method, review.

ENVIRONMENTAL PROTECTION

Abstract: Based on a brief introduction of the basic concepts of oil vapor recovery system of the gas station, according to the problems existing in the process of renovation, maintenance and operation of oil vapor recovery system in gas station, such as the concentration of oil vapor increases in the operation well, the dispenser cannot refuel even when gun being taken, the unloading time extends or the dispenser cannot unload oil, the gas vapor concentration on the refueling site increases, and the equipment renovation, operation and maintenance cost increases, some measures are put forward, i. e., to strictly regulate the construction and approval procedures, revise the gas station operation process, update the equipment timely, control the transformation frequency, carry out the preliminary investigation, improve the relevant training, and use the related accessories differentially, providing a reference for the renovation, operation and maintenance of oil vapor recovery system in gas station.

Key words: gas station, oil vapor recovery, renovation, problems, measures.

QUANTITY AND QUALITY MANAGEMENT

Abstract: According to the problem that the leakage of buried oil tank in gas station is hard to be discovered, the method of dynamic monitoring the leakage of oil tank under the operation condition of gas station using a quantity tracing technology of high measurement accuracy, " accurate quantity fitting" is introduced. Through the practical application on 1800 oil tanks in a certain area, the initial slight leakage of the oil tank can be detected, which can effectively prevent the serious hidden danger of gas station, prevent the environment pollution and ensure the accurate measurement of the gas station.

Key words: gas station, oil tank, leakage, " accurate quantity fitting" quantity tracing method, prevention, measures.

Abstract: The definition, function and working method of hybrid tank measurement system and density measurement principle are introduced. The reasons causing density measurement error are analyzed. The solutions to reduce the density measurement error are put forward to improve the measurement accuracy of the oil in oil tank: one is to replace high precision pressure transducer to solve the density measurement error for low liquid level; the second is to apply linear regression method to solve the density measurement error for high liquid level.

Key words: hybrid, oil tank, measuring system, density, measurement, error, analysis.

SAFETY MANAGEMENT

Abstract: In view of the key points and difficulties of site safety management in the common operation processes of oil depot reconstruction, such as fire operation, temporary power operation, working at height and excavation operation, some corresponding measures and practices are put forward, and the job safety analysis method (JSA) commonly used in the safety risk analysis for oil depot construction is introduced, providing a reference for improving the site safety management of oil depot construction.

Key words: oil sales enterprise, oil depot, construction, safety management.

Abstract: The current situation of site safety management of temporary power operation in oil depot and gas station constructions of oil sales enterprises is introduced, and the reasons why the temporary power operation easily causes electric shock and fire accidents are analyzed. The measures are put forward, viz. the strict implementation of the relevant regulations, strengthening the construction site management, carrying out regular maintenance, strengthening propaganda on power operation safety, organizing regular training, and implementing standardized operation.

Key words: oil depot, gas station, construction site, temporary power operation, safety, management.

OPERATION MANAGEMENT

Abstract: Combined with the actual development of the retail network of oil product, the investment cost control measures are proposed: In advance stage, the first is the scientific and rational selection of location, and effective assessment of the consumption market and expected return; the second is to control the land cost and apply flexibly the usage of land; the third is to optimize the construction scheme and effectively control project cost. In the implementation phase, the first is to implement the open bidding; the second is to optimize the implementation program. In the post phase, the first is to complete the final accounts audit; the second is to carry out the post – evaluation of auditing project. It can provide a reference for the scientific and reasonable control of the investment cost of the retail network.

Key words: oil product, retail, network, development, investment, cost, control.

Abstract: At present, the development trend of the integration of traditional petrochemical sales enterprises and mobile internet services puts forward new requirements of the digital and intelligent transformation, precision membership marketing and massive data processing on the architecture and performance for data analysis of petrochemical sales enterprises. The problems existing in the data processing of petrochemical sales enterprises are pointed out, viz. the standards are not uniform and not normative, the traditional structure is of defects, the own data is relatively limited. The strategies and steps are put forward to improve the implementation of big data analysis, providing a support for the petrochemical sales enterprises to improve analysis level of member big data.

Key words: petrochemical sales enterprises, member, big data, analysis, application, discussion.

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