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The Importance of Safety Production and Humanistic Management in Petroleum Project

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Abstract:Oil and gas industry has higher standard of safety requirements in production unit due to its high-risk nature of products. Production safety management is the most important component of petroleum project management. With the integration of humanistic management, the smoothness of project operations and the safety of personnel, facilities and products are guaranteed. Therefore, it is necessary to investigate the production safety policies in the aspects of humanistic management. Implementation of production safety and humanistic management protocols can effectively reduce the risk factors; thereby improve economic efficiency of oil and gas companies.

Keywords: Petroleum engineering, Safety production, Humanistic management

1. Definition of Petroleum Project

Petroleum project refers to the activities related to oil and gas exploration, development, construction and implementation, involving a broad range of disciplines such as engineering, chemistry, geology and other disciplines and skills, as well as drilling engineering, production engineering and reservoir engineering. Pipeline engineering is also part of the petroleum project as crude oil will be transported after production. Petroleum project is characterized with high level of investment and difficulty, technically complex, harsh environment, etc. Simultaneously, it also has strong organizational, technical and economical characteristics.

2. The Importance of Production Safety in Petroleum Project

Safety and health management is one of the vital constituents of oil and gas industry activities. The main purpose is to secure occupational safety and health of employees, to prevent occurrence of accidents and to ensure safety and smoothness in production. Raw materials used in petroleum engineering are mostly flammable, explosive and volatile which might lead to accidents with the presence of any source of fire or other risk factors. Taking into account the severe conditions of petroleum production, flammable materials are more combustible under high temperature and pressure condition; tend to reach their explosive limits. Thus, safety management in production needs to be

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strengthened.

3. Analysis of Safety Management Issues in Petroleum Project

Current issues of safety management in petroleum project are: (1) Lack of safety awareness. Formal and impetuous management systems are common in petroleum project development. Some companies focus only on maximizing profits from the projects, neglecting other factors. Limited resources are invested into operation safety, resulted in potential risks and accidents. Overall, lack of safety awareness on authorities, did not recognize the importance of safety management caused subjective errors. (2) Problems encountered during implementation stage. At present, China's oil and gas projects generally have established a relatively complete safety management system. However, there are still some issues need to be further improved in the implementation stage. Firstly, the implementation of the safety management requires a more comprehensive management system of organization. Some projects encounter the issues of incomplete safety management unit and undefined job responsibilities. This phenomenon will affect the safety management level of business or projects. Even though some business or project teams equipped with complete organization, there are still some problems in management level in term of undefined or unclear job responsibilities. Secondly, safety management involves a company and project personnel, it requires the employees to have better understanding of safety awareness for effective implementation of the safety management. Some companies did not instill the safety awareness to their employees, causing low awareness among employees and affect the implementation. (3) Experience-based safety management. The application of safety management tends to be empiricism in which evaluate risk factors based on their experience with subjective judgement resulting in incomprehensive assessment. Safety management theory and actual safety management are not effectively integrated causing hidden flaws in the production safety.

4. Humanistic Management Protocols in Complete Petroleum Project Safety Production

4.1 Regulatory enforcement

Integration of humanistic management into safety production requires the compliance and enforcement of the regulatory. Most of the companies' executives misunderstand the concept of humanistic management as the rules and regulations of safety production can be loosely complied; hence reduce the effectiveness of safety management. This requires continuous improvement of the regulations and restriction on personnel production activities and behavior in actual situation of oil and gas companies.

4.2 Fulfill people's needs

Safe production and management guarantee companies sustainability and development. In term of humanistic management, it is important to consider the actual needs of workers and their personal development; constantly improve their quality of life and fulfill their reasonable needs. Therefore, they can imitate traffic safety merit system by implementing safety merit system in companies. Deduction of points based on the seriousness of incident and its impact, followed by corrective measures to the incidents and safety educations. Report shall be made to national authority if

necessary. The main purpose of the safety merit system is to strengthened personnel safety awareness and operational safety mainly through education, and punishment if necessary.

4.3 Actively build safety culture

Safety concern is an important part in production, the production efficiency and quality can be improved to greater extent with a safety culture. In petroleum production project, humanizing management is emphasized, with appropriate competition that allows the participation of every employee. Simultaneously, companies should establish specific production safety noticeboard which explain every critical steps of the production which might lead to accident and also the instructions to use the flammable and explosive materials. By doing this, employees will gradually recognize the importance of production safety, improve their safety awareness, and minimize the violations of the safety regulations and mistakes.

4.4 Improving the quality of workers

Manpower is the main factor in petroleum project safety production. Any operational mistakes will cause severe incidents. Safety production can be achieved by improving the quality of the personnel. In reality, safety seminars were organized regularly by oil and gas companies as to increase the safety awareness of the employees to regulatory compliance and their professionalism. Moreover, the communications between management and employee need to be strengthened. Further understanding the work-life balance of the employee leads to better communication and solutions when problems arise, whilst not affecting the employee performance. Thereby, improvement on the personnel quality is important.

4.5 Strengthening education and publicity on safety

Safety education and publicity plays a vital role in raising the participation and safety awareness of the related personnel. Statistics regarding the accidents in construction projects revealed that 80 percent of the incidents occurred due to inappropriate behavior and mishandling of personnel. Thus, it is necessary to strengthen education and publicity on safety for petroleum project through establishment of a comprehensive safety education and training system based on the manpower and possible risk factors. In addition, advance professional training is important due to the specialty of petroleum project.

4.6 Improving the ability to identify risks

Risk identification is the primary task in risk management to identify the potential risks that might occur in every stages of petroleum project, carry out risk assessment and develop scientific approaches to the corresponded risks. Risk identification is categorized into two groups: internal risk identification and external risk identification. Internal risks refer to the personnel involved in petroleum project, for instances, equipment operation risks, technical risks, etc. while external risks refer to environmental factors such as natural conditions, changes in oil and gas market, etc. External risks are variable and cannot be manipulated; thereof require detailed and rigorous risk identification for accurate and effective measures. Detailed and effective risk identification contributes a better understanding of risks impacts and more accurate risk assessment, establishing a rigid foundation in risk management.

4.7 Strengthening the management of the organization

In order to make production works completed safely and smoothly, it is crucial to emphasize on organizational skill and

leadership as well as practice comprehensive safety management continuously. Firstly, instill safety awareness into the personnel and set a rigorous safety standard for assessment. In the aspect of safety, any inappropriate behavior that arising safety issues is prohibited and it is zero tolerance policy. Secondly, improves the management details and codes of conducts constantly; sets up incentive and punishment policies; and implements in strict accordance with the system and standards. During operation progress, always put safety as priority, establishes a comprehensive safety and supervision system and fully implement the responsibility system for production. With a comprehensive production safety protocols and standards for compliance and assessment, the management level of production safety can be further improved.

In summary, mishandling in petroleum project will have great impact on oil and gas companies' economic performances and pose serious safety and health threats to the workers. Therefore, oil and gas companies must implement humanistic management for sustainable development as well as to provide a solid foundation for safety production.

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