

(Improving Health and Safety Management in the Saudi Arabian Oil and Gas Construction Project)

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Abstract— Health and safety issues have always been a major problem in the oil and gas construction projects. It is found to be one of the dangerous industries, which has adverse impact on the health and safety related issues. Several efforts have been made to address this problem, but there is a lot of scope for the improvement of health and safety management. The article explores health and safety issues in relation to the oil and gas industry in Saudi Arabia. This article identifies all the safety and health issues, as well as, its adverse effect on human lives. The article also reflects several work related hazards that are concerned with oil and gas projects and the possible measures for preventing such health and safety risks.

I. Introduction

In the oil and gas industry, health and safety management is one of the most vital constituents as the chemicals and harmful end products that are associated with the production of gas and oil pose a serious threat to the health and safety of workers. Saudi Arabia is one of the wealthiest countries of the world because it has extensive oil resources. The world consumes millions of barrels of petroleum or crude oil every day, and the oil and gas resources contribute a huge part in the world economy (Tam, Zeng and Deng, 2004). The oil and gas industry is a main contributor to the Saudi economy; therefore, health and safety management becomes a crucial factor that needs to be addressed by the nation.

There are several hazards in the oil and gas industry such as safety, injury, health and illness hazards. Fire might cause interruptions in the oil production and accidents might occur that can cause hazards to humans and the environment, as well as, it will also lead to huge economic losses (Oloke, Yu and Heesom, 2007). Health and safety of the employees of oil and gas industry is always at stake as numerous activities such as chemical use within the industries cause harm. There are several processes such as cementing, stimulation, drilling and production that require improvement in the health and safety management strategies (Karmis, 2001).

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II. Objective

The main objective of this article is to analyse the health and safety issues and the ways of improving the health and safety management in the Saudi Arabian oil and gas construction projects.

III. Review of Literatures

According to Stellman (1998), protection of humans from physical injury is known as safety. Health and safety is a set of rules and procedures intended to protect people from accidents or injury caused at the workplaces. There are several safety and injury hazards such as fire, explosion, vehicle accident, slips and falls due to uneven surface or frequent need to work at elevation, unnatural ventilation, limited opening for entry and exit that may cause fatigue. According to Alasamri, Chrisp and Bowles (2012), for the management of health and safety, there is a need for effective and well structured policies so as to ensure the health and safety of employees in the oil and gas construction projects. There are several hazards that cause adverse effects on humans. Hazards includes chemical hazards such as carcinogen, irritant, toxic and corrosive, and physical hazards such as radiation, vibration and extreme temperature that might lead to several safety and health hazards (Sheikh, 2013).

The processes in the oil and gas industry have potential health effects, which are as follows: Agents such as drilling mud, radioactive sources, petroleum products, metals, chemicals, pathogenic microorganism might cause health effects such as stress, heart stroke, infection and parasitic diseases, cancer, spinal disorder, dermal and eye issues. According to Badiru and Osisanya, (2013), the oil and gas companies in Saudi Arabia have made several improvements in its health and safety management such as project monitoring, fire training, and modification of work permits. Several companies provide medical services in case of emergencies, as well as, companies also take steps in monitoring and preventing the oil spills (Alhajeri, 2011).

According to Husein (2013), legal authorities of Saudi Arabia employed some legal and regulatory policies that need to be followed by oil and gas construction industries (Karmis, 2001). It is essential that every employee in construction related projects should have health insurance. There are different legal arrangements such as Environmental Protection Standards (EPS) (1982), General Environmental Law (GEL) (2001), and Implementing Regulations (IR) (2003), which ensures the effective++ delivery of health and safety related regulations in the oil and gas construction related projects (Mitchell, Marcel and Mitchell, 2012).

IV. Recommendations

In order to mitigate the factors that affect health and safety issues of oil and gas construction projects and

their impact on the concerned employees, some measures need to be taken by the industry. Some of the effective recommendations are given below:

Management, as well as, workers should align together and raise safety awareness, use safety gadgets and latest technologies to manage the health and safety issues (Brace, et al., 2009). Knowledge management practices, as well as, expert engineering practices should be involved (Ismail, Doostdar, and Harun, 2012). In construction safety management, some structural modifications need to be made where the focus should be placed on leading indicators so as to have advantages of total safety management (Agwu, 2012). Infrastructure should be improved and must be suitable for workers. Good management systems should be followed that will help the practical implementation of safety measures through leadership (Isosceles Group, 2014).

v. Conclusion

In order to develop an improved safety culture, it is essential that the oil and gas construction industries mitigate such factors that affect health and safety of their employees. There are several adverse effects that cause hazards to human lives. There is a drastic impact of the factors affecting the health and safety of employees; thus, some measures needs to be taken to establish a safe work environment. Knowledge management practices should be improved to keep the business process aligned with health and safety aspects of organisations.

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