

An Investigation in to the Integrated Occupational Health, Safety and Risk Mitigation System Employed by the Indian Oil and Gas Industry

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Abstract: *This research addresses hazard identification, safety concerns, and management practices within the oil and gas industry. Activities such as well drilling and related operations often involve the use and generation of potentially hazardous substances. Oil and gas wells may release hydrogen sulfide, which poses a serious risk to workers by exposing them to toxic gases. To prevent injuries and fatalities, three key best practices are commonly recommended: continuous gas monitoring, effective planning, and comprehensive training programs for personnel. Workers in the oil and gas industry who are exposed to chemicals used or produced during operations may suffer from occupational illnesses affecting the lungs, skin, and other organs, depending on the level and duration of exposure. Prolonged exposure to high-risk environments may also lead to noise-induced hearing loss. Additional hazards include confined spaces, which can pose serious risks or even be life-threatening, especially for untrained personnel. The primary goal of occupational safety and health risk management is to identify and evaluate potential safety and health hazards in the workplace and to establish appropriate control measures and response strategies. Risk management refers to a systematic and interactive process involving a series of steps that, when followed in sequence, support continuous improvement in decision-making. The main objective of risk management is to establish a shared understanding among all stakeholders about the nature of risks and how they will be managed to enhance performance, increase organizational value, and reduce financial distress. In this study, both primary and secondary data sources were utilized for analysis. The research identified several risks facing the Indian oil and gas industry, including fluctuations in global oil prices, currency depreciation against major international currencies, health and safety concerns, political interference, environmental pollution, brain drain, shortages of crude oil, heavy debt resulting from government subsidies on petroleum products, defaults by oil marketing companies, and high operational risks. While the industry has incorporated risk management into its strategic planning and established audit and risk management departments, it continues to struggle with effective implementation.*

Keywords: Occupational hazards, petroleum and gas industry, audit and compliance, real-time monitoring, health risk management, occupational safety and health (OSH), and associated safety protocols and measures

