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Sharing of Best Practices in Managing Human Factors to Prevent Incidents

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ABSTRACT

Objective: The purpose of this study was to investigate the need for Knowledge Management (KM) and its link with Human Error (HE) that leads to major hazard accidents with single or multiple fatalities. To date, the majority of major accidents were because HE is including those in the oil and gas industry, either at offshore or onshore worksites. The aim of this study was to develop a KM framework integrated with HE which can be used to prevent, minimise or reduce major accidents among the oil and gas industry players in offshore and onshore installations. The objectives of this study were (1) to determine the critical success factors for KM framework based on HE elements, (2) to develop and validate an integrated framework that integrates KM and HE to prevent major accidents and (3) to determine the HE factors that contribute to major hazard accidents. Based on the literature review, a research methodology for KM and HE in major accident prevention in oil and gas installations was developed. Besides, the most suitable types of KM, the effectiveness of KM in offshore installations and the best method of sharing the outcome from KM in oil and gas installations were also determined. **Results:** The results and findings of the analysis of the secondary data, the cross-sectional survey questionnaire and the interview data on the view of the Company and Contractors which were among the primary data of the research were presented. The relevant and related research questions were included in the questionnaire. The results and the conclusions were based on the analysis of the feedback from the selected respondents using Statistical Package for Social Science (SPSS) software. **Conclusion:** Possible result of developing KM framework implementation in OSH and integrating HE to prevent major accidents in oil and gas installations. The relationships between KM and HE that contributed to major accidents in the oil and gas industry and the elements of health and safety practices were examined in this study. The finding revealed that HE is the significant factor behind the major accidents in the installations at offshore facilities and the overall health and safety performance. Critical success factors such as organisation, leadership roles, transfer of knowledge, and learning and sharing in major accident prevention are more of an outcome of the relationship between HE and the major accidents in the oil and gas industry. On the other hand, lack of understanding, resistance to change and lack of management commitment within the organisation, especially the OSH management were identified as the barriers in implementing KM frameworks. Most of the barriers are well taken care of by the management to overcome and ensure the success of the implementation process in the company. Recommendations for future studies and the prevention methods to improve health and safety management in the oil and gas industry to improve safety and security in the workplace, either within or outside Malaysia, were included.

Keywords: Knowledge Management framework; human error; oil and gas industry; major accident; occupational safety and health