Embracing The Human Factors Approach

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Abstract

**Objectives/Scope:** While technology and safety management systems are fundamental to safety, a core aspect lies in safe human behavior. What influences human behavior is a multitude of factors, be it task, individual or organizational collectively called Human Factors (HF). This paper delves into the scope of HF in the oil and gas industry with a tailormade HF training program that includes a quantifiable assessment tool to enable proactive assessment of HF. It also outlines a pragmatic approach to analyzing human errors, which facilitates a more robust root cause analysis in incident investigation.

**Methods, Procedures, Process:** This paper shares the building blocks of the HF training program developed in-house based on an extensive review of HF theories that have emerged in the last 30 years. Drawing on the lessons learned highlighted by a number of incident investigation reports, the paper elaborates on how HF can influence our everyday life that form the strength of the training program. The HF assessment tool was adapted from a consolidation of popular tools developed by Step Change in Safety, Energy Institute, UK Health and Safety Executive, and questions were tailored to gather quantitative data from workforce and supervisory level employees. Building on existing and validated research, the paper outlines a systematic decision tree framework for analyzing human errors to aid in asking the right questions in the incident investigation process.

**Results, Observations, Conclusions:** The positive feedback from the HF training program across oil and gas facilities affirmed that there is a growing interest to understand the impact of HF in operations. Participants have embraced the simplistic and practical content and have shared that it has provided them a comprehensive understanding of HF, while giving them tools to manage HF aspects in their workplace. Secondly, the assessment data gathered on an array of HF topics shone light on areas of strength, such as equipment design, communication, training, to name a few. It highlighted emerging areas of improvement, such as fatigue, workload, and risk-taking. The outputs of these assessments will enable a drive for targeted safety improvement projects. Finally, the decision tree framework developed for incident investigation analysis has led to its adoption into an interactive Lessons Learned process, which has facilitated organization-wide learning of HF.

**Novel/Additive Information:** There is a huge appetite for understanding HF and its applicability in the oil and gas industry. This paper is a step forward in building on this current momentum by creating a solid foundation of HF, establishing a pragmatic approach to assess HF, as well as highlighting ways of integrating HF into current processes, thereby building HF capability in the Region.