Prescriptive Safety Requirements in a Goal Setting Environment?

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Abstract

Since the Cullen Enquiry was completed in the United Kingdom in the wake of the Piper Alpha disaster, the offshore oil and gas industry has moved from prescriptive code based safety requirements to a goal setting based regime.

Operating companies and engineering contractors have often struggled to implement effective goal setting performance standards during the design process. There are several examples where the design features have resulted in excessive costs, project schedule delays or inadequate levels of design safety.

This paper proposes a set of minimum performance criteria that could be adopted for the primary safety critical systems for large-scale offshore E&P facilities. The authors have used experiences and lessons learned and the foundation and selection of a fit-for-purpose approach to minimum requirements for:

- Temporary Refuge
- Escape and evacuation systems
- Facility layout
- Passive fire protection
- Integrated and Automated Fire & Gas Detection, Emergency Shutdown, Emergency Depressuring systems

The paper will present the justification for selecting this small number of key features and the demonstrateable minimum requirements set for each critical item. The paper will also address the key elements of the safety engineering process that deliver design safety integrity of offshore oil and gas facilities.