There will be Blood: API 770 and Human Error Prevention in Process Safety

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Abstract

It is axiomatic that human error is a causal factor in 60 to 80 percent of accidents and catastrophic events in complex, tightly-coupled systems used in the process industry. It is also clear that these events often have large environmental and public consequences. This paper discusses the perception of consequences in mishap causation and presents a number of tools used to prevent human error. One of these is the SHEL Model, a simple but extremely effective way to analyze error provocative conditions through the interaction of system components with the human operators; the model may also be used as a results-multiplier in the application of human error mitigation strategies presented in API 770. Use of the SHEL Model for routine error trapping tasks such as job safety analyses, permit-to-work systems, or management of change, may significantly reduce the potential for human error as well as decease near miss and accident events.