Focus on Mission Success: Process Safety for the Atychiphobist

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Abstract

Modern process plants are complex engineering systems. While thorough reviews of system safeguards are performed, catastrophic events continue to occur, often unfolding in unforeseen ways. Success in process safety demands safe processes, and understanding rare, high consequence events is central to the traditional process safety approach. This philosophy is common to all high-hazard industries, offering the potential for sharing approaches, experience, and lessons learned. The problem, however, is that people (and organizations) who fear failure (atychiphobia) sometimes obsess about failure so much that they miss opportunities to succeed.

This paper examines selected risk management practices in the power generation and aerospace industries and how those practices have led to improved performance. Risk-informed-decision making has had widespread application, and has undergone enhancements as a key framework for risk management. Additionally, rather than focusing on avoidance of loss, there are emerging approaches supporting achievement of success. This approach provides a more direct link of risk to business and operational objectives, but does challenge conventional risk approaches founded in a loss prevention-centric view. The paper reflects upon risk-informed decision making and success modeling, and suggests how these methods may be applied in the field of process safety. Specific examples are drawn from the critical safety function approach from the nuclear power industry and mission success concepts developed for NASA.