ABSTRACT

The implementation of process safety management has received significant attention in the last 25 years, with major incidents (e.g., Piper Alpha and Bhopal) giving rise to new rules and practices. But despite this attention, major catastrophic incidents have continued to occur. Retrospective views on these events have consistently shown organizational cultures that resulted in systems breakdown.

This pattern pointedly tells us that process safety must make the same migration as that of personal safety in recent years – one of recognition that systems are only as effective as the culture in which they operate. We know that culture shapes behavior. And behavior is how systems are implemented.

This paper presents an approach to Comprehensive Process Incident Prevention that builds on the foundation of PSM to create a system addressing four major components, anticipation, inquiry, validation and resilience, to build a strong safety culture.

The four components of this approach will be described:

Anticipation: we will discuss both the systems and key leadership practices that are necessary to assure that the organization is effective in early recognition of potential issues

Inquiry: the critical leadership behaviors that mitigate cognitive bias and “group think” will be discussed. Without attention to these behaviors the effectiveness of several key PSM systems (e.g., PHA and PSSR) can be undermined

Validation: methods and leadership behaviors to assure that PSM elements are implemented as intended and used consistently will be reviewed

Resilience: we will review how to build a culture in which workers are both able and willing to make early intervention, potentially preventing a small process disruption from becoming a major incident

The importance of each component, how it relates to existing PSM elements, and where breakdowns tend to occur will be described. This will provide a framework for moving beyond traditional PSM to an approach that explicitly creates a strong process safety culture.