A HAZOP Methodology for Transient Operations

S.W. Ostrowski
ExxonMobil Chemical Company
Scott.W.Ostrowski@ExxonMobil.com

Abstract

Transient operations include unit startup, shutdown, emergency operations requiring human intervention, and other "higher risk" non-routine or abnormal operations. History has shown that a disproportionate percentage of process safety incidents occurred during transient operations. Deficiencies in procedures and employee training are often cited as a root cause of these incidents and the increased reliability and extended turnaround intervals of our plants are resulting in less familiarity with procedures outside normal operations. The paper will present a HAZard and OPerability (HAZOP) process designed to verify that the hazards of transient operations, with the potential for an acute loss of containment, are identified and adequately controlled. The analysis effort is focused on the identification of required unit specific activities (tasks) and an in depth review of the procedural controls required for the safe and successful completion of those tasks with a potential for an acute loss of containment. Timely identification of hazards, the adequacy of procedural and design controls to ensure correct sequencing, early feedback of potential errors, clarity and completeness of transient operations are all reviewed in detail. The technique uses a combination of knowledge and experience of a cross functional team, guide words, and reference lists to drive a disciplined approach to identify and suggest enhancements for procedural and design related issues.