Effective Management of PSM data in implementing the ANSI/ISA-84.00.01 Safety Lifecycle

Carolyn Presgraves
AE Solutions
Greenville SC USA
Direct: (864) 404-3035  •  Main:(864) 676-0600
Cell: (864) 420-6805
carolyn.presgraves@aesolns.com

ABSTRACT
As more and more corporations are identifying the ANSI/ISA-84.00.01 standard as their target for compliance with the relevant process safety information (PSI) and mechanical integrity requirements of OSHA 1910.119, many are struggling with adding the ISA-84 Safety Lifecycle to their existing PSM practices and processes. Part of the confusion stems from the separation of PSM personnel within the organization from the plant engineers, automation designers, maintenance staff, and the operators typically involved in owning and operating the Safety Instrumented Systems (SIS). Another key hindrance is the lack of exposure of the PSM personnel to these downstream activities of SIS System design and maintenance. Many PSM groups are completing PHA/LOPA analysis but are unsure how to get the SIS related results verified and implemented, while automation groups are separately working to incorporate ISA-84 compliance within their systems. Successful implementation of the ISA-84 safety lifecycle standard is predicated on visibility of each group’s role within the overall lifecycle from PHA/LOPA, to SIS system design and implementation, through to operation and maintenance of the facility.

Many organizations are losing effectiveness through the group setting the safety integrity level requirements, and the group implementing and verifying those safety integrity levels using separate tools and data sets. With data connectivity between these interdependent groups, errors in the process can be reduced and efficiency improved.

The author will illustrate how managing the flow of related PSM target data from front end loading analysis (PHA/LOPA) through design, implementation, and operations enable correct maintenance strategies to be applied to the equipment specifically identified as safety critical. Conversely, well maintained and easily accessible performance records can enhance the hazard analysis and event frequency assumptions made during initial and revalidation studies. This feedback loop can contribute to evergreen process safety data by validating original assumptions and identifying additional opportunities.

This paper presents the roles of the PSM, engineering, and maintenance professionals in executing the key steps in completing the ISA-84 Safety Lifecycle; highlighting specific applications where effective PSI data management can be leveraged to ensure continuity in the work flow processes, informed risk-based decision making, and establishment and reporting on related process safety performance goals within the organization.