Hazard Analysis & Risk Assessment

"Hazard Analysis and Risk Assessment" efforts are typically carried out in five steps:

1. Define the scope of work and describe the system and its components
2. Identify hazards
3. Evaluate the impact of the hazards on staff, equipment, the public and the environment. Assess the likelihood and severity of each hazard (assess the risk).
4. Lower risk levels by techniques such as changing the system design, identifying engineering and/or administrative controls, and selecting appropriate personal protective equipment (PPE). Then determine if risk has been reduced to an acceptable level. (Iterate back to Step 1 to ensure no additional hazards have been introduced by controls or changes to the system and its components.)
5. Follow up actively with periodic review of work scope and hazards

The Hazard Analysis and Risk Assessment process should involve members of the project and/or safety teams with expertise in relevant areas, such as project management, chemical systems, electrical systems, and waste management. This process should be maintained throughout the system's operational lifespan, as new hazards may emerge due to system aging or changes in operating parameters. These hazards and their associated risks must be continuously identified, evaluated, and mitigated.

For more in depth information don't miss our eLearning Course or our Webinar on the topic. For further reading see the H2Tools site.

Item #	Subsystem or Component	Probability of Failure Resulting In (Rupture Due to Overpressure, External Leak, Internal Leak, Contamination, Other)	Probability of Combustible Mixture Forming From Step 2 Failure	Probability of Ignition (Electrical, Mechanical, Thermal, Shock, Other)	Probability of Fire, Deflagration, Detonation, Other	System Response (Controls or Mitigation)	Secondary Effects	Reaction Effect Rating	Recommendations
1	Low Pressure Storage								
2	Manifold								
3	Compressor								
4	High Pressure Storage								
5	Vent system								

Probability Code
0 = Almost Impossible
1 = Remotely Possible
2 = Possible
3 = Probable
4 = Highly Probable

Please contact us at chs@aiche.org if you have a suggestion for a future topic.