Economic Justification for Process Safety Systems

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Abstract

Improving the overall safety within the process industries requires that process safety programs and projects get funded by plant management. In this day of increasing competitiveness in the global marketplace, the competition for capital expense dollars internally within an operating company is fierce - and every program and project must deliver solid economic payback to justify funding. Unfortunately in many cases, it is not enough for Safety Professionals to present risk mitigation and compliance to regulations as justification for process safety projects when the economic payback is often more obvious for other types of projects vying for the same investment dollars. Risk mitigation can be seen as unnecessary for managers who have not experienced an incident, or who will be moving around the corporate ladder within the next 3-5 years - their need is to make the bottom line look good in the near future. Also, standards and regulations are subject to interpretation and the implications of non-compliance misunderstood. Understanding these factors is critical because for every proposed project, management will always base their decision on a cost/risk analysis – usually looking for a 1-2 year payback at the most. If left to their own, management will make this analysis on proposed safety projects. It is better for Safety Professionals to present a solid economic justification and make this analysis than to let management do this themselves.

The overall safety in industry is not improving as fast as it should be because all too often the Safety Professionals ignore the economic aspects and refuse to specifically quantify the business impact. The decision to either upgrade, expand, leave as-is, or eliminate the safety system should be a business analysis. The analysis should include such things as 1.) the cost of lost production opportunities due to spurious trips, 2.) the impact of functional proof-test periods on spurious trips (due to the injection of the 'humanware' factor) and thus on lost production opportunities, 3.) the cost of capital for a safety system retrofit, 4.) using expense dollars versus capital dollars, 5.) the expected cash flow
curves and break-even time expectations, 6.) and of course the cost and risk due to incidents of capital equipment, fines and litigation. Providing this type of information to management as a result of the safety system audit will make the decision for safety the easy decision for management to make, improving both the bottom line and the overall safety of the industry.