Process Safety Indicators used by the Delaware Accidental Release Prevention Regulatory Program

Jay Brabson, P.E.
Environmental Engineer
State of Delaware
Accidental Release Prevention Program Phone: 302-324-2050
Jay.Brabson@state.de.us

ABSTRACT

There is a clear intent to prevent catastrophic accidental releases of extremely hazardous substances contained in Clean Air Act (CAA) of 1990 Section 112(r). Many substances can be rendered extremely hazardous by reactions, heating, pressure and even static electricity resulting in the potential for low probability but high consequence events. We believe that, based on the intent of the CAA and the expectations of both workers and the public, process safety regulators should address catastrophic accidental releases for substances using not just enforcement actions after the fact, but incorporating and using leading/lagging indicators as well.

Catastrophic accidental releases and incidences beyond the designated regulatory list of extremely hazardous substances (EHS) continue to occur. These events make headlines and result in regulatory agency enforcement actions and Chemical Safety Board (CSB) investigations. The Baker Report, following the 2005 BP refinery explosion, concluded that the use of injury/fatality metrics is not an adequate indicator of process safety. The Baker report further suggests that more leading indicators like loss of containment, fires, and explosions be used to measure process safety program quality. Delaware’s Accidental Release Prevention engineers agree and see them as leading indicators of process safety program issues that could result in a future catastrophic event. We see a need to track smaller releases and incidents by regulators responsible for oversight of process safety in manufacturing industries.

Risk management and process safety program requirements are performance oriented with the goal of continuous improvement. This paper discusses Delaware’s amendment of our environmental release reporting regulations, beyond the accidental release prevention rule, for use as a metric and leading indicator to both track industry performance and to review corrective actions and process safety improvements. We believe there is a role beyond fines and enforcement actions for the regulator to represent public, worker, and environmental interests and that useful metrics have been added to our existing regulatory rules.