

The essentiality of process-safety management

Employers and employees must be mindful of reactive chemicals hazards

LOSS OF LIFE IN THE WORKPLACE IS A TRAGEDY of enormous proportion. One of the tools the Occupational Safety and Health Administration (OSHA) uses to eliminate workplace disasters is the Process Safety Management (PSM) standard issued in 1992. Questions have arisen about whether the standard is sufficient and whether it should be amended. The Chemical Safety and Hazard Investigation Board (CSB) says revision is necessary, but OSHA disagrees.

Shortly after OSHA proposed the PSM standard, the Clean Air Act Amendments (CAAA) were enacted; Section 304 requires OSHA to issue a chemical process safety standard to prevent accidental releases of chemicals.

The PSM standard applies to processes containing more than a threshold quantity of any of 137 OSHA-list-

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ed chemicals. Coverage is triggered by use of more than a threshold quantity of any chemical listed as being highly hazardous and. Some of the minimum elements of the standard require that employers:

- Develop and maintain written safety information identifying workplace chemical and process hazards, and equipment and technology used in the processes.
- Perform a workplace hazard assessment, including identification of potential sources of accidental releases, identification of any previous release within the facility that had a potential for catastrophic consequences, estimation of workplace effects of a range of releases, and estimation of the health and safety effects on employees;
- Consult with employees and their representatives on the development and conduct of hazard assessments and the development of chemical accident prevention plans and provide access to these and other records required under the standard;
- Establish a system to respond to the workplace hazard assessment findings, which shall address prevention, mitigation and emergency responses;
- Provide written safety and operating information for

employees and contract employees and train them in operating procedures by emphasizing hazards and safe practices;

- Train and educate all employees and contractors in emergency-response procedures in a manner as comprehensive and effective as that required by the regulation promulgated pursuant to Section 126(d) of the Superfund Amendments and Reauthorization Act;
- Establish a quality assurance program to ensure initial process-related equipment, maintenance materials and spare parts are fabricated and installed consistent with design specifications; and
- Conduct pre-startup safety reviews of all newly installed or modified equipment.

Of critical importance to the success of any PSM plan is the process hazard analysis (PHA). This element consists of a disciplined review of what could go wrong in the workplace, and what measures should be implemented to prevent releases. Employers must update and revalidate their PHAs at least every five years.

OSHA has promoted a voluntary program of enhanced education and outreach efforts to broaden awareness about the hazards posed by reactive chemicals. The enhanced awareness is based on a CSB 2002 report. The CSB recommended that OSHA revise the PSM standard to control reactive chemical hazards that could have catastrophic consequences and to implement a program to define and record information on reactive incidents. OSHA has declined to pursue CSB's recommendations. OSHA has instead steadfastly maintained that voluntary measures consisting of enhanced education and outreach to broaden awareness of workplace safety hazards, particularly as they relate to reactive chemicals, are all that are necessary. CSB has stated that it believes such efforts are inadequate; however, change to the PSM is not expected anytime soon.

Employers and employees alike must be ever mindful of the unique hazards posed by reactive chemicals, as well as the hazards posed by release of the chemicals the PSM standard was intended to address. Loss of life in the workplace is always tragic, and almost always preventable. **CP**

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