

OSHA's Process Safety Management

A Road Map to Doing
Chemical Safety Better





Introduction

PSM is OSHA's safety rule for chemical processing. Doing it right requires a lot more than just checking off 14 boxes. Join us to explore why PSM is important to your operation, and learn 6 of the biggest obstacles to maintaining OSHA compliance.

It seems that every month a new headline reads, "Mass Casualty Incident at Chemical Plant." This summer, the public witnessed a massive fire at a plant in Rockford, Illinois, which evacuated 150 nearby homes in June, followed by an acetic acid leak at a chemical plant in Harris County, Texas which killed two and hospitalized 30 in July. Three months earlier, an explosion and fire at a factory in Columbus, Ohio took the life of one worker and resulted in over \$1 million in property damage.

And these are only the incidents hitting mainstream news outlets. According to the World Health Organization, an estimated 65,000 people died between 2009 and 2018 due to technological chemical events.^[1]

As an employer, you understand the safety risks and requirements of your business. You're educating your workers and third-party contractors on the appropriate procedures. And you're enforcing these practices in order to help prevent such incidents in the future. While you've likely already engaged process safety management (PSM) in some capacity, there's a lot more to PSM than just checking off a few boxes.

[1] https://www.who.int/health-topics/chemical-incidents#tab=tab_1



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01

What is Process Safety Management?

Process Safety Management (PSM) is the U.S. Department of Labor Occupational Safety and Health Administration's (OSHA) 14-step process by which through analysis and revision of operating procedures, incident investigation, employee and contractor training, emergency planning and safety audits, organizations can avoid risky incidents and violation-related fines and penalties. It most directly applies to companies handling more than 130 reactive and toxic chemicals, or flammable gases and liquids of 10,000 pounds or more, regardless of industry, but inclusive of:



Manufacturing
(including pyrotechnics and explosives manufacturers)



Farm product warehousing



Construction



Natural gas liquids



Utility services
(electric, gas and sanitary)



Wholesale trade

PSM is not only important for large organizations. In fact, one study showed that employers with 25 or fewer employees suffered more injuries than organizations with 1,500 or more employees.^[2]

[2] <https://www.osha.gov/sites/default/files/publications/OSHA3908.pdf>



02 The 14 Elements to Incorporate into Your PSM Program

An effective PSM program will incorporate these 14 elements to meet OSHA compliance:



Contractor Training



Mechanical Integrity



Employee Participation



Safety Compliance Audits



Pre-Startup Safety Review



Emergency Planning & Emergency Response



Process Safety Information



Trade Secret Protection



Process Hazard Analysis



Hot Work Permits



Operating Procedures



Management of Change Process



PSM Training



Incident Investigation/
Accident Investigation



03

Why is PSM important?

An effective PSM program can help prevent fires, explosions, large chemical spills, toxic gas releases, runaway chemical reactions, and other major incidents. These types of events cause great health and safety risk to workers, as well as the facility's surrounding community.

Beyond the potential human cost of a hazardous incident, organizations can also face clean up and repair damage fines as well as the potential reputational damage caused by a lack of safe protocols. When large-scale incidents like oil leaks make mainstream news, not only is the company's reputation as a safe employer affected, business partners and consumers across the country begin to associate the negative news with the company's brand or product. Improved safety procedures can sometimes allow companies to realize cost efficiencies and savings through inventory controls, storage practices, and better handling of materials.



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OSHA enforcement to increase this year

A recent executive order from the White House mandates that the Occupational Safety and Health Administration (OSHA) target its enforcement toward larger employers and those with whistleblower complaints. President Biden has promised to increase the number of inspectors by 2022 and therefore, employers should expect the number of citations to follow suit.

When it comes to contract worker safety on the job site, the hiring company is often the one held liable even when your contracts attempt to transfer risk to the contractor entity. Here are the 3 most common pitfalls to avoid:



Poor contractor management and oversight

Contractor management and oversight are critical to ensuring every worker goes home safely at the end of each day. The best way to do this is to engage a digital contractor management platform that combines training, daily checks and balances for workers and their field managers.



Contractor training

Recent audits conducted by Veriforce have revealed that many contractor companies don't provide even basic OSHA-required training to their field staff, leaving potential hazards waiting to happen. Like regular employees, contractors need to be well-informed of the risks involved in their work and the importance of following safety protocols. Anyone handling hazardous materials needs to be diligent. Often, contractor companies do not have the same resources as hiring companies do, so they look to the larger entity to fill the gap in training.



Poor contractor selection

A formal vendor and contractor safety prequalification program is critical to choosing the right contractors to work on your site. A formal program should require outside vendors and contractor companies to meet OSHA and your company's health, safety and environment (HSE) requirements. A formal program can not only help you manage your contractor workforce but will mitigate the risk when selecting contractor companies to source from.



05

The biggest obstacles to effective PSM

While conducting PSM audits, our industry experts have noticed key trends among employers related to their existing programs. Here are 6 high-focus areas for employers based on commonly overlooked or poorly executed PSM program components:

- 1 Ensure accuracy of your process safety information (PSI).**

Your facility has all kinds of safety information, inclusive of the data related to piping and relief valves, ventilation calculations, and implementation drawings for each process. All of this information and more needs to be accurately documented and kept as current as possible in order for your PSM program to be effective and OSHA compliant.
- 2 Maintain up-to-date process hazard analysis (PHA).**

Hazard analysis is a key provision of any PSM program. According to OSHA, an organization's PHA should be updated and revalidated every five years, ensuring that it is consistent with current processes within PSM. Many organizations struggle to not only keep their PHA's current but to track the implementation of all recommendations set forth in the initial PHA.
- 3 Make standard operating procedures equipment specific.**

During the employee training process, the accuracy and specificity of your organization's standard operating procedures (SOPs) is crucial. For employers who frequently hire contractors, SOPs come into play regularly. SOPs need to include clear instructions for safely operating each covered process in the PSM and should address steps for each operating phase, operating limits, HSE considerations, and safety systems.



05

The biggest obstacles to effective PSM (continued)

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Have a formal management of change process.

Don't get ahead of yourself. When it comes to implementing change within your organization's operating procedures, technology, or equipment lineup, make sure you take the right steps in the right order. Establish and document procedures to manage change within your organization, providing the technical basis, impact, time period, authorization requirements, and necessary SOP modifications for each change. Too often change is implemented without the proper training and education, which puts organizations and employees at risk. Something as small as a new pipe's material can cause great damage.

5

Reduce gaps in the audit cycle.

PSM audits are required of employers every three years to ensure they remain compliant. Maintain this schedule to reduce audit gaps. OSHA will want to see a third-party PSM expert has performed these audits and documented all deficiencies and the actions taken to correct them.

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Document Everything

Documentation is the key to PSM compliance and avoiding related fines and penalties. Even if you are consistently training your employees but fail to keep accurate records of it, you could be fined by OSHA. If you are hiring contractors, make sure they have up-to-date training and insurance certificates. If your contractors don't have formal PSM training, hiring employers are liable for the PSM training of their contract employees.



About Veriforce

Veriforce® is a recognized leader in delivering comprehensive, integrated supply chain risk management solutions that help bring workers home safely and optimize business performance. The company's SaaS safety and compliance platform, data integrity and verification practices, and standardized safety training programs empower leading organizations to drive safety and compliance into their supply chains and down to the worker-level.

Veriforce is the world's premier supply chain risk and compliance management network, comprising more than 650 hiring clients, more than 50,000 contracting companies, over 9,000 accredited safety trainers and authorized evaluators, and over 2.5 million workers. It's this network that makes Veriforce the preferred partner for companies that strive to ensure a safe, qualified third-party workforce, to stay ahead of risk, and achieve optimal business performance. Company offices are located in The Woodlands, TX, Covington, LA and Calgary, AB.



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