

## Process Safety for Industry



Process safety is the protection of people and property from episodic and catastrophic incidents. CH2M HILL uses a systematic approach to identify process risks and implements proactive measures to reduce and manage risk.

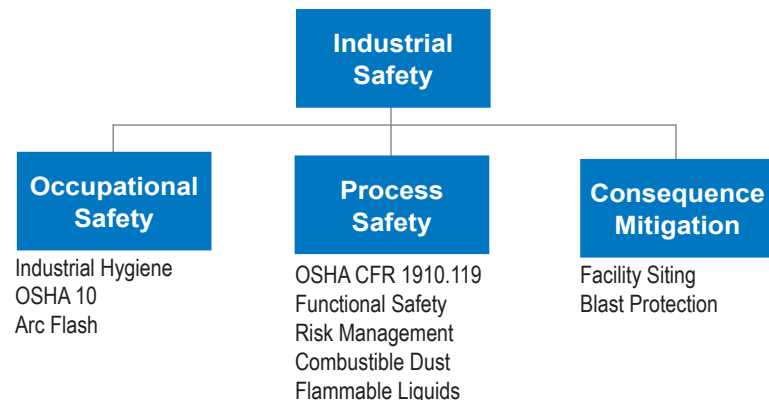
### Benefits of Process Safety

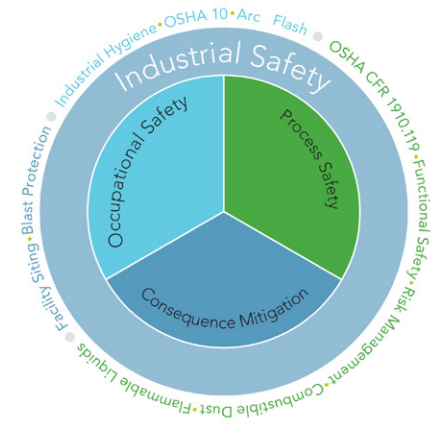
Each year the process and petroleum industries handle millions of tons of chemicals and flammables. Many of these substances pose reactivity, toxicity, flammability, or combustibility hazards. Accidents, although infrequent, pose severe consequences to people and the environment, and can result in economic loss. The benefits of a comprehensive process safety program include the following:

- Identifying and understanding the risk
- Implementing risk management measures designed to reduce the frequency of cause
- Modifying designs to include inherently safer technology (IST)
- Ensuring that layers of protection are truly independent
- Defining protection and mitigation measures to reduce the consequences of an event

*There is an old saying that if you think safety is expensive, try an accident.*

*Professor Trevor Kletz  
Texas A&M University*





### Process Safety Partners

CH2M HILL is pleased to integrate process safety into all aspects of project planning, engineering, construction, and operations. Our client partners are from a variety of industries:

- Energy exploration and recovery
- Oil and gas delivery and storage
- Petrochemical refining
- Agricultural and specialty chemicals
- Plastics, monomers, and synthetic fibers
- Pigments, paints, coatings, and resins
- Mining and materials recovery
- Materials processing

## Safety First

CH2M HILL provides a comprehensive approach to industrial safety. Occupational safety considerations are incorporated into base designs to protect individuals. Process safety techniques are used for planning and to establish a roadmap for basic and detailed design. Consequence mitigation tools are employed to reduce the effect of undesired events and protect lives. CH2M HILL is successful because of the following:

- Our staff is experienced in design and operation of process facilities that handle highly hazardous chemicals, flammable liquids, and combustible dusts.
- We are knowledgeable in domestic and international engineering codes and standards that represent good engineering practice.
- Our technical experts track current initiatives and proposed rule changes and communicate to design staff.
- We understand the objectives of OSHA National Emphasis Programs (NEPs) for Process Safety and Combustible Dust, and monitor periodic status reporting to place appropriate emphasis on the issues identified under the program.
- We participate in industry standards and good engineering focus groups, contributing to the next generation of industry guidelines.
- Our diverse staff includes licensed engineers who maintain industry certifications for a variety of technical specialties.

## Services

- Risk identification and consequence assessment
- Risk mitigation and management
- RAGAGEP review and regulatory compliance audits
- Flammable and combustible dust modeling and design
- Process Safety Management (OSHA CFR1910.119)
- Functional safety lifecycle and safety instrumented system design
- Fire protection, ventilation, and damage limiting construction
- Incident investigations
- Arc flash calculations and electrical compliance evaluations
- Consequence modeling and facility siting
- Overpressure relief and blast protection

### About CH2M HILL

Headquartered near Denver, Colorado, employee-owned CH2M HILL is a global leader in full-service consulting, program management, design, construction, and operations for public and private clients. With \$6.3 billion in revenue and more than 23,500 employees worldwide, CH2M HILL delivers innovative, practical, sustainable solutions—helping clients develop and manage infrastructure and facilities that improve efficiency, safety, and quality of life. The firm has long been recognized as a most-admired company and leading employer, including being named by FORTUNE magazine as one of the 100 Best Companies to Work For (2009). CH2M HILL is an industry-leading program management, construction management, and design firm as ranked by *Engineering News-Record* (2009).

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