Process Safety Engineering Fundamentals - PSF - eLearning Course

COURSE

About the Course

This Process Safety Engineering Blended program extends the Process Safety Engineering Principles program to the Fundamental level. Course material is reinforced using problems, simple calculations, and applications to an example facility. The applications provide an opportunity to integrate the concepts and methods in an oil and gas environment.

Each module includes two 90-minute interactive sessions with the instructor, in which the applications and any concerns the participants may have will be discussed in detail. Frequent references will be made to historical incidents and common areas of process safety concern. By the end of the program, participants should be ready to apply their learning on the job.

There is also an instructor-led version of this course - details here

Target Audience

Facilities and/or process engineers, as well as engineers and operations staff involved in process safety and asset integrity

You Will Learn

Risk analysis and Inherently Safer Design (ISD)

- Select and apply common methods of risk analysis
- Identify opportunities for use of ISD
- Apply risk assessment and ISD to an exercise that will run throughout this series of skill modules

Process Hazard Analysis (PHA) techniques and Layers of Protection Analysis (LOPA)

- Select appropriate PHA methods, including HAZOP and API 14C
- Identify suitable applications for LOPA
- Apply learnings to an exercise that will run through this series of skill modules

Leakage and dispersion, combustion behavior, sources of ignition

- Estimation of hydrocarbon behavior on loss containment
- Identification of common ignition sources
- Estimation of hydrocarbon behavior following ignition

- Application of learnings to an exercise that will run throughout this series of skill modules

Historical Incident Databases (HID), metrics, and specific facilities (bad actors)

- Applications of HID
- Criteria for sizing flare headers
- Identify potential process safety incidents at the example facility by considering specific systems and equipment (bad actors)

Relief, flare, and depressurization

- Size a relief valve for vapor service
- Size a relief valve for liquid service
- Describe how to calculate the relief load due to full bore failure of a heat exchanger tube
- Calculate inbreathing and outbreathing for atmospheric tanks
- Identify the key sizing parameters for flare headers and depressuring systems

Controls and Safety Instrumented Systems (SIS)

- Explain control valve sizing and selection for some common applications
- Explain the advantages, disadvantages, and typical applications of commonly used instrumentation
- Explain the application of commonly-used process control techniques
- Explain how a SIS (Emergency Shutdown System) is applied in faciility design
- Apply the learning to the example facility

Spacing and layout, fire prevention

- Identify the tradeoffs inherent in spacing and layout decisions, with regard for their process safety implications
- Explain the logic behind decisions regarding fire prevention philosophy, selection and location of fire and gas detectors, and firefighting equipment
- Apply learnings to the example facility

See example online learning module

Course Content

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- Historical Incident Databases (HID), metrics, and specific facilities (bad actors)
- Relief, flare, and depressurization
- Controls and Safety Instrumented Systems (SIS)
- Spacing and layout, fire prevention

Product Details

Categories: Midstream

Disciplines: Process Facilities Health, Safety, Environment

Levels: Foundation

Product Type: Course

Formats Available: On-Demand Virtual

Instructors: Peter Williams

On-Demand Format

| Course | On-Demand (Available Immediately) $3,990.00