Course Title: CCPS’ What Every New Engineer Needs to Know about Process Safety

Course ID: CCPS’ What Every New Engineer Needs to Know about Process Safety
Course Type: eLearning Course
http://www.aiche.org/ela154

Course Outline

Process Safety Module 1

- Course Objectives
  - Describe key elements of process safety
  - Identify and apply key concepts and terminology to process safety
  - Locate other resources to further process safety education

- What is Process Safety?

- Why is it important?
  - Ethics
  - Regulations
  - Economics

- Basic Terminology
  - Hazard
  - Loss of Containment
  - Vulnerability
  - Consequence
  - Frequency
  - Risk
  - Mitigation
  - Risk Tolerance
  - ALARP (As Low As Reasonably Practicable)
  - RAGAGEP (Recognized and Generally Accepted Good Engineering Practices)
Process Safety Module 2

Objectives
  o Describe means of identifying hazards
  o Identify means of modeling hazards and risks

Introduction
  o How to determine what hazards are present and what to do with them?

Hazard identification
  o Known vs. Unknown Hazards
  o Sources of hazard information:
    o Hazard analysis studies
    o Leading and lagging indicators
    o Incident Pyramid

Hazard Modeling
  o Loss of containment
  o Toxic Dosage
  o Fires
  o Vapor cloud explosion
  o Other Explosions and concerns

Risk Modeling
  o Consequence modeling
  o Frequency modeling
  o Risk modeling
  o Cost benefit analysis

Mitigation

Definitions
Process Safety Module 3

1. Objectives
   a. Describe methods for reducing likelihood of loss of containment
   b. Discuss different management techniques to reduce risk

2. Introduction
3. Inherently Safer Design
4. Mechanical Integrity
5. Training
6. Emergency Response Planning
7. Culture
8. Definitions