

Fire Protection and Emergency Response

(4.8 CEUs)

Background:

The Mary Kay O'Connor Process Safety Center (MKOPSC) at Texas A&M University and the LyondellBasell Center for Petrochemical, Energy, & Technology (CPET) at San Jacinto College are taking initiatives to develop a process safety training program for workers in the chemical and energy industries. The program will target operators, supervisors, and engineers with four courses designed to provide a thorough knowledge base but balanced with hands-on, real world applications and practice. Upon completion of the four courses, a trainee will receive a Process Safety Continuing Education Certificate from San Jacinto College.

Each course will provide 48 hours of instruction over 3 months delivered in a hybrid format consisting of:

- 24 hours of online lecture and study materials prepared by Texas A&M MKOPSC.
- 24 hours (one 8-hour day/month) completing hands-on, work-based learning in the CPET state-of-the-art facilities.

Pre-requisites:

- Completion of the *Introduction to Process Safety* course

Description:

This course covers fire protection design concepts and considerations for oil, gas, and chemical processing facilities. Special attention is given to fire hazard analysis, fire risk assessment, fire protection features, and emergency planning response. Specific fire protection design considerations are studied for the various types of facilities and processes. Various aspects of emergency response preparedness and practices are also covered.

Objectives:

- Recognize hazards requiring fire protection attention
- Compare/contrast passive and active fire protection systems
- Assess the strengths/weaknesses of fire protection features as they relate to facility and process protections and inventory of hazardous materials
- Explain the steps in fire hazard analysis and fire risk assessment and relate the importance for both to fire protection design
- Relate the importance of fire protection engineering concepts to the safety of facility and individuals

Topics:

- Fire protection fundamentals and strategies
- Understanding fires
- Overview of fire prevention elements
- Fire protection systems
- Fire hazard analysis
- Fire risk assessment
- Installation of fire protection systems
- Inspecting, testing, and maintenance of fire protection systems
- Disasters and emergency response
- Emergency preparedness and response plan
- Incident command system
- Industrial fire-fighting techniques based on inventory
- Case studies
- Field trip/tour