Process Hazards Analysis (PHA)

Course Description

Course Overview
The goal of this course is to develop a basic understanding of the requirements for a Process Hazards Analysis (PHA) and the techniques used to conduct such an analysis. Participants will collaborate in small groups to analyze scenarios using incident videos and case studies. They will use critical thinking skills to predict potential problems.

Audience
The Process Hazards Analysis course is designed for operations, technology, engineering, maintenance and safety managers; technical, operations and maintenance engineers; frontline supervisors with prior experience to operational risks; PHA element/committee leader and team members; and site process safety management committee members.

The content is highly technical, requiring the facilitator and participants to be familiar with operating technology risks and have prior experience in operations, maintenance and/or projects. They should also have prior knowledge of material hazards, process design and equipment design.

Learning Objectives
In order to accelerate skill development, this course features a problem-based learning approach that provides a collaborative job-focused experience. Participants will practice completing parts of the PHA including hazard identification, consequence analysis, hazard evaluation, risk analysis, and development of recommendations; identify and apply procedural requirements to potential job-related safety hazards; and use critical thinking to compare requirements to actual documented hazards. They will collaboratively build a personal compilation of recommendations to apply back at work, transfer diagnostic strategies to job-related decisions; and demonstrate an understanding of the material in order to participate as a member of the PHA team.

Length:
3-day course

Pre-requisites:
- PSM 101: PSM Overview
- PSM 201: Process Technology
- Prior exposure to operations, maintenance, projects

Module 1:
Planning and Preparing for a PHA
This module covers how to select team members, train them, and develop a charter.

Module 2:
Hazard Identification
Participants will identify toxic, flammable, explosive, reactive, and mechanical hazards.

Module 3:
Consequence Analysis
In this module participants will practice toxic and flammable modeling. They will also uncover the direct impact of potentially hazardous events.

Module 4a:
Process Hazards Evaluation
Participants will explore the ways hazardous events can occur.

Module 4b:
Determine Consequences with Loss of Engineering and Administrative Controls
Participants will determine consequences based on the consequence analysis they performed in module 3.

Module 5:
Recommendations
Participants will develop recommendations to apply back at work, transfer diagnostic strategies to job-related decisions; and demonstrate an understanding of the material in order to participate as a member of the PHA team.

Module 6a:
Prepare Report
Participants will develop recommendations to apply back at work, transfer diagnostic strategies to job-related decisions; and demonstrate an understanding of the material in order to participate as a member of the PHA team.

Module 6b:
Manage PHA Performance (KPIs)
Participants will identify toxic, flammable, explosive, reactive, and mechanical hazards.

Module 6c:
Determine Risk
Using consequence and frequency, the risk of an event will be estimated during this module.

Module 6d:
Identify Risk Mitigation Needs
In this module participants will determine events that require risk mitigation.

Module 6e:
Develop and Prioritize Recommendations
Participants will make recommendations to maximize efficacy of the PHA.

Module 6f:
Instructor Led Training
This module will cover how the PHA team should document the review team’s work and prepare a report.

Based on our experience, we recommend that companies do the following on an organizational level:

- Apply PHA to Select Operations
- Refresher e-learning
- Manage PHA Performance (KPIs)
- Apply PHA to Select Operations
- Upgrade PHA Standards
- Instructor Led Training
- Apply to all operations
- Assess Competency

Results and Path Forward
After completing this course, participants should compile a list of action items based on their learning to apply back on the job. This includes writing a new or upgrading an existing PHA procedure. To build competency at the individual level, the participant should identify a coach, apply the updated PHA standard to two unit operations as a team member, get assessed on the competency requirements for applying PHA, and facilitate a PHA learning session for other unit operations.

Additional training on consequence analysis, facility siting, and safer processes may be needed. It is recommended that participants go through an e-learning refresher course once a year and instructor-led refresher training once every three years.

General Enquiry:
Call 1-800-828-8190 to speak with an account representative.

www.training.dupont.com