Overview of the Chemical Facility Safety Basis Course

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Introduction

- **The DOE Safety Basis Academy, Chemical Facility Safety Basis course provides working knowledge and skills needed to understand the safety basis programs and facility safety requirements associated with a DOE hazardous chemical facility.**
- **This course also covers the general process used to conduct characterization and analysis.**

Course Content

- Course consists of 17 Terminal Learning Objectives
- Present the 17 TLO
- Present details for some TLOs

Terminal Learning Objectives

- **Describe the regulatory requirements governing DOE chemical facility safety analysis.**
  - **29 CFR 1910.119, *Process Safety management of Highly Hazardous Chemicals***
  - **29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response***
  - **40 CFR 68, *Accident Prevention Provisions***
  - **40 CFR 302, *Designation, Reportable Quantities, and Notification***
  - **40 CFR 355, *Emergency Planning and Notification***
  - **10 CFR 851,*Worker Safety and Health Program***

Terminal Learning Objectives

- **Describe the process safety information that is compiled in preparation of conducting a process hazard analysis (PrHA) as given in 29CFR1910.119.**
- **Perform a chemical process hazard analysis (PrHA) in accordance with the Process Safety Management (PSM) rule (29CFR1910.119).**
  - Requirements and format
  - Acceptable Methods

Terminal Learning Objectives

- Determine and describe the program requirements for processes subject to the RMP Rule (40 CFR 68).
  - Requirements for Program Level Determination
- Develop Prevention Programs for Protection Levels 1, 2, and 3.
  - Description of Requirements for Program Levels
- Develop a Risk Management Plan (RMP) as described in 40 CFR 68, Subpart G.

Terminal Learning Objectives

- Conduct an offsite consequence analysis as described in the Risk Management Program Guidance for Offsite Consequence Analysis
- Develop a worst-case scenario as described in the Risk Management Program Guidance for Offsite Consequence Analysis.

Terminal Learning Objectives

- Determine the worst-case release rates for regulated substances as described in the Risk Management Program Guidance for Offsite Consequence Analysis.
- Estimate worst-case distance to toxic endpoint as described in the Risk Management Program guidance for Offsite Consequence Analysis

Terminal Learning Objectives

- Develop an alternate release scenario as described in the Risk Management Program Guidance for Offsite Consequence Analysis.
- Estimate alternative release scenarios release rates for toxic substances as described in the Risk Management Program Guidance for Offsite Consequence Analysis.

Terminal Learning Objectives

- Estimate the distance to the endpoint for alternative release scenarios for toxic substances as described in the Risk Management Program Guidance for Offsite Consequence Analysis.
- Estimate the release rates for alternative scenarios for flammable substances as described in the Risk Management Program Guidance for Offsite Consequence Analysis.

Terminal Learning Objectives

- Estimate the distance to the endpoint for alternative scenarios for flammable substances as described in the Risk Management Program Guidance for Offsite Consequence Analysis.
- Estimate the number of offsite receptors (dose receivers) potentially affected by worst-case and alternative scenario releases as described in the Risk Management Program for Offsite Consequence Analysis.

Terminal Learning Objectives

- **Determine 10CFR851 requirements for analyzing and controlling chemical hazards.**