Chemical Hazards Engineering Fundamentals (CHEF), a 2-Day Workshop

Who Should Attend

Personnel performing **screening level** hazard and/or risk analyses for existing and future manufacturing facilities. Manufacturing personnel, process research engineers, process design engineers, and other process safety staff will also benefit.

Learning Objectives

- Develop familiarity with concepts and simple methods such that Hazard Evaluation Teams, with the help of Facilitators, Technology Experts, and Process Safety Specialists, should be able to perform screening level Hazard Identification and Risk Evaluations.
- Demonstrate the models used in the CHEF Calculation Aid spreadsheet.
- Document the methods utilized in the Risk Analysis Screening Tools (RAST) spreadsheet.
- Understand the limitations of the methodologies and when to utilize more advanced methods or to engage a Subject Matter Expert.

CHEF includes an Excel Calculation Aid to help users understand and utilize the correlations used to model and evaluate estimated airborne quantities, vapor dispersions, and explosion overpressures and their impact. These correlations provide the basis for the Risk Analysis Screening Tool (RAST). The CHEF Calculation Aid and RAST provide a bridge between the qualitative approach and quantitative approach to risk analysis, before it invests in complex, detailed quantitative hazards and risk assessments (e.g., Quantitative Risk Assessments, QRAs).

Workshop Outline

Recognizing Process Hazards
- Chemical and Process Hazards
- Hazard Screening

Identifying Hazard Scenarios
- Hazard ID Techniques
- When to Perform
- Key Process Information
- Scenario Based Hazard Identification

Introduction to Risk Analysis
- Risk Definition and Measures
- Introduction to CHEF Calculation Aid

Estimating Hazard and Damage Distances
- Airborne Quantities
- Vapor Dispersion Analysis
- Explosions

Estimating the Severity of Consequences to People, Facilities, and the Environment
- Impact Analysis
- Likelihood Evaluation
- Overview of Layer of Protection Analysis