

Effective ERS Design – Core Module 3

Applied ERS Design

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Overview

The Applied ERS Design module demonstrates how state-of-art ERS design and information management systems can be applied to execute turnkey ERS projects of any scale with accuracy and consistency in a cost effective manner.

This module will help process / safety engineers and managers gain exposure to industry standard tools and systems for ERS design, analysis and information management.

Topics

- ◆ ERS Design Heuristic
- ◆ Introduction to SuperChems and ioXpress
- ◆ ERS Design using ioXpress
- ◆ Information Management using ioXpress
- ◆ ERS Design using SuperChems
- ◆ Object Definition in SuperChems
- ◆ Mixtures and Fluid properties in SuperChems
- ◆ Scenario Definition in SuperChems
- ◆ Running Computational Models in SuperChems
- ◆ Generating Graphs and reports

Participants

This module is ideally suited to process industry professionals involved in the design, analysis, documentation, and management of emergency relief systems.

Course Materials and Fee

Attendees will receive presentation summaries, exercises, and data for techniques currently employed in ERS design for reactive and complex ERS systems.

Fee: \$1,000

Fees for course includes lunch and refreshments. They do not include hotel accommodations or travel, which are each participant's responsibility.

Course Outline

Day One

ERS Design Heuristic — 8:00AM to 9:45AM

A discussion of a practical approach to ERS design that encompasses the full life-cycle starting from an assessment of needs, selection of appropriate protective devices and effluent handling systems, and ongoing operational and maintenance requirements. Special emphasis will be placed on information management.

Introduction to SuperChems and ioXpress — 10:00AM to 12:00PM

A demonstration of SuperChems and ioXpress - ioMosaic's industry standard ERS design, analysis, project and information management tools. Topics include the evolution of SuperChems, software design and architecture, and an illustration of how SuperChems and ioXpress address a wide range of ERS design and project management needs.

ERS Information Management Using ioXpress — 1:00PM to 2:45PM

A discussion on the application of ioXpress to organize, access, maintain, and manage ERS design data. Topics include the integration of ERS data with other plant information management systems such as inspection programs, asset management databases, management of change (MOC) functionality, etc.

ERS Design Using ioXpress— 3:00PM to 5:00PM

A discussion on the application of ioXpress to streamline ERS design project management and execution. Topics include configuration and expediting of ERS design workflows, collaboration amongst ERS design project team(s), automated report generation, etc.

Day Two

ERS Design Using SuperChems — 8:00AM to 9:45AM

An overview of SuperChems' overall ERS design capabilities. Topics include scenario definition for simulation models, algorithms for generating and analyzing scenarios within SuperChems, and the application of rating or design modes of analysis.

Object Definition in SuperChems — 10:00AM to 12:00PM

A description of the objects available in SuperChems and their utility to develop the basis for an overpressure scenario. Topics include definition of equipment and relief devices, identification of piping systems, definition of surroundings and contingency effects, and characterization of reactivity.

Mixtures and Fluid Properties in SuperChems — 1:00PM to 2:45PM

A description of SuperChems' inherent thermodynamic capabilities. Topics include component characterization, mixture definition, and execution of thermodynamic operations for thermophysical properties.

Scenario Definition and Computation in SuperChems-Part I — 3:00PM to 5:00PM

A demonstration on creating scenarios within SuperChems to analyze a wide range of overpressure contingencies using steady-state flow models. Topics include a description of various scenarios and the definition of scenarios based on their collection of objects.

Day Three

Scenario Definition and Computation in SuperChems-Part II — 8:00AM to 9:45AM

A demonstration on creating scenarios within SuperChems to analyze a wide range of overpressure contingencies using dynamic flow models. Topics include a description of various scenarios and the definition of scenarios based on their collection of objects.

Generating Graphs and Reports — 10:00AM to 11:30AM

A discussion on SuperChems' charting and reporting capabilities. Topics include different types of reports and graphs, diagnostic techniques based on the results of an analysis, and the integration of results and analysis with ioXpress for long-term information management and updates.

Wrap-up Discussion — 11:30AM to 12:00PM