Quantitative Risk Analysis

Instructors: Georges Melhem and Neil Prophet

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Overview:

Quantitative Risk Analysis (QRA) demonstrates how the results generated through conducting consequence analysis studies can be expanded to give a full Quantitative Risk Analysis. Considers additional input required, including failure rate data, the effects of population and ignition sources, and meteorological data. Individual Risk and Societal Risk criteria are both addressed.

The Quantitative Risk Analysis module provides guidance on how to conduct an effective quantitative risk analysis. The course builds upon the previous Consequence Analysis & Modeling training course and focuses on the additional aspects of quantitative risk analysis.

Topics:

- Risk Overview
- Stages in a Quantitative Risk Analysis
- Background Data
- Risk Mitigation Techniques
- Software for Quantitative Risk Analysis

Who Will Benefit:

This module will help process / safety engineers and managers who wish to familiarize themselves with the concepts and basics of QRA. This course is designed for process industry professionals responsible for performing consequence modeling or using its results in risk assessments, emergency response planning, loss prevention, inherently safer design, facility siting, or environmental protection.

Course Materials and Fee:

Attendees will receive presentation summaries and sample problems depicting a range of techniques used in quantitative risk analysis.

Fee: $300

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

Course Outline

One Day Course

Risk Overview
An introduction to the concepts of Quantitative Risk Analysis and the different types of risk. Topics include Individual Risk, Societal Risk, and Legislative Risk Criteria.

Stages in a QRA
An overview of the stages involved when conducting a QRA. Topics include an overview of Hazard Identification, Frequency Analysis, Consequence Analysis and Risk Calculation.

Background Data
A discussion on the background data required when conducting a Quantitative Risk Analysis. Topics include failure frequency data, meteorological data, population and ignition data.

Risk Mitigation Techniques
A discussion on common risk mitigation options which can be considered as options during a Quantitative Risk Analysis. Topics include the four main approaches to inherent safety: reduction, substitution, moderation and simplification.

Software for QRA
Using a worked example, this section demonstrates how software tools can be used to conduct and automate Quantitative Risk Analysis. Making use of the SuperChems Expert™ software, the worked example will cover all stages of a QRA, consolidating all topics covered in the previous sections.

Enrollment Information

Enrollment for each course is limited. We suggest you register as early as possible. Please fill out the registration form online at: www.iomosaic.com. We accept payment by check, credit card, or company purchase order.

Telephone or fax reservations will also be accepted.
These training courses are designed to enhance the skills of professionals with new responsibilities and include proprietary ioMosaic material.

Times

Course registration and check-in begin one half hour before start time on the first day of each course. Course will typically run from 9 a.m. to 5 p.m.

Cancellations

Please notify us of cancellations in writing as soon as possible. Cancellations within two weeks of the course date are subject to a charge of 50% of the registration fee. If you fail to notify us of your cancellation before the course begins, you will be responsible for the full fee. There is no charge for substitutions.

Location and Lodging

This course will be held at ioMosaics' Houston, TX Office. Please contact our Educational Services at (603) 893-7009 to find out which hotel will be available. Participants are responsible for making their own hotel reservations.

ioMosaic's Houston Office
2650 Fountain View Drive, Suite 410
Houston, TX 77057
Tel: 713-490-5220

Instructors

G. A. Melhem, Ph.D.

Dr. Melhem has participated in large scale LNG studies, LNG risk assessment projects and LNG public testimony. He is an internationally known pressure relief design, chemical reaction systems, and fire and explosion dynamics expert. In this regard he has provided consulting and design services, expert testimony and incident investigation support and reconstruction for a large number of clients.

Prior to founding ioMosaic Corporation, Dr. Melhem was president of Pyxsys Corporation; a technology subsidiary of Arthur D. Little Inc. Prior to Pyxsys and during his twelve years tenure at Arthur D. Little, Dr. Melhem was a vice president and managing director of Arthur D. Little's Global Safety and Risk Management Practice and its Process Safety and Reaction Engineering Laboratory.

Dr. Melhem holds a Ph.D. and an M.S. in Chemical Engineering, as well as a B.S. in Chemical Engineering with a minor in Industrial Engineering, all from Northeastern University. In addition, he has completed executive training in the areas of Finance and Strategic Sales Management at the Harvard Business School.

N. Prophet

Mr. Prophet is a Partner at ioMosaic Corporation. Mr. Prophet has over eight years experience in the field of process safety, having previously worked for Det Norske Veritas, and Berwanger, Inc. He has presented numerous consequence analysis software and quantitative risk analysis software courses, throughout the world.

Mr. Prophet has a B.Eng. (Honors) in Chemical Engineering, and a Postgraduate Diploma in Energy Systems & the Environment, both from the University of Strathclyde.

About ioMosaic

ioMosaic Corporation is a leading provider of LNG safety and risk technology consulting services and software solutions. Our areas of expertise include runaway reactions and pressure relief design, consequence and risk analysis, fire and explosion dynamics, incident investigation, litigation support, training, mitigation design, hazard evaluation, and model development.

Contact Us

Contact us by email: support@iomosaic.com or by phone at: 603.893.7009.

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