

Combustible Dust PHA Leader Training

As required by NFPA 654 w/ OSHA Compliance Officer Participation

St. Louis, Missouri September 16 - 18, 2008

Instructors: J. Perry, M. Murphy and M. Myers, P.E.

Guest Speakers: Chief Smith—Inc. Commander to Imperial Sugar Explosion & a Rep. from Georgia's State Fire Marshal Office

Overview

2008 has been an industry turning point with regard to addressing dust explosion hazards. It is now well known that OSHA and others are focused on enforcing current codes for dust explosion prevention. A key aspect of this involves identification of hazards through process hazard analyses. This course, Combustible Dust PHA Leader Training, will provide the tools to conduct comprehensive PHAs. Leadership training will be provided for HAZOP and Checklist methodologies. A brief introduction to LOPA, FTA and other methodologies will be provided as well as a summary of dust explosion testing methods.

Topics

- ♦ Intro to Dust Hazards
- ♦ OSHA Regulatory Update
- ♦ Required Testing
- ♦ Codes and Practices
- ♦ PHA Leadership
- ♦ PHA Documentation
- ♦ PHA Revalidation

Who Should Attend

This course is ideally suited to process industry professionals involved in the design and review of operations with potential dust explosion hazards.

Course Materials and Fee

Attendees will receive presentation summaries, exercises, **free PHA documentation software and 6 pre-populated dust hazard checklists:** dust collectors, mills, man way charging, silos, facility siting & blending.

Fee: \$1,900

Fee for course includes lunch and refreshments. Fee does not include hotel accommodations.

Course Outline

Day One - 8:30 AM to 5 PM

Recent Regulatory Action—OSHA Compliance Officer & Georgia State Fire Marshall Office to participate

A review of the recent regulatory and legislative actions related to dust explosion hazards, including OSHA's NEP on Combustible Dust and the CSB's recent report.

Note: Regulatory update includes Q&A with OSHA and Georgia's State Fire Marshall's Office

Understanding Dust Explosion Hazards and How to Characterize Them

An introduction on how to obtain and utilize key dust variables such as K_{st} , MIE, P_{max} , chargeability and others.

Codes and Practices

A review of the governing / relevant codes, standards, and best practices including NFPA 61, NFPA 654 and ISA 84.00.01.

When to do a PHA

Guidance on how PHAs are best utilized during process development or process changes.

PHA Methodologies

An overview of key PHA methodologies. A focus on combining HAZOP and Checklist PHAs to address the unique hazards of dust handling operations. Discussion on required preparation work to ensure an efficient PHA.

The HAZOP Methodology

How to lead a HAZOP, the most widely used and comprehensive PHA methodology.

Hors d'oeuvres Reception

Day Two - 8:30 AM to 5 PM

Checklist Methodology

How to develop and utilize checklists. Each participant will leave with 6 pre-populated dust hazard checklists.

Development of a Risk Matrix

How to assess dust explosion safeguards using a risk ranking matrix. A discussion of the difference between hazard and risk as well as tolerable risk levels will be included.

Recommendations

How to develop and follow up on recommendations for code compliance and risk management. Recommendations typically include inherent, active, passive or procedural safeguards.

HAZOPtimizer Training

How to use [HAZOPtimizer](#), ioMosaic's free PHA software.

PHA Revalidation

Guidance on how to effectively revalidate a PHA based on RAGAGEPs. (NFPA 654 requires a review and update at least every 5 years.)

Day Three - 8:30 AM to 3 PM

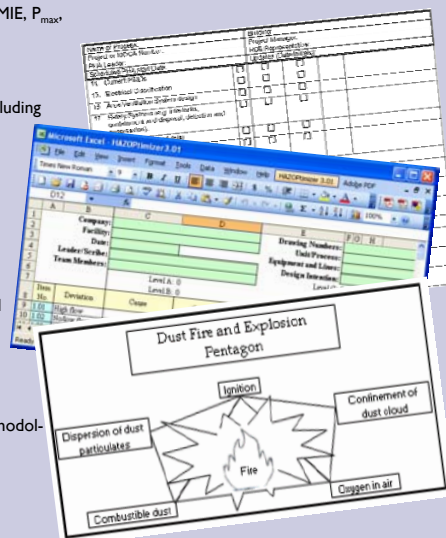
Workshop Sessions

Small group hands on workshops. Trainers will describe a dust handling process and have each student set up and conduct a portion of a PHA. Each student will be able to practice leading the PHA.

Common PHA Mistakes

Discussion of mistakes and pitfalls to avoid, gathered from ioMosaic's many years of experience.

Wrap-up Discussion



Instructors from ioMosaic:

Judy Perry

Ms. Perry worked in the Chemical and Petrochemical Industry for over 20 years before joining ioMosaic. She has a B.S. in Chemical Engineering and an M.S. in Environmental Sciences. Since joining ioMosaic she has been helping companies address hazards associated with dust explosions, flammable liquids, chemical reactivity, as well as leading Process Hazard Analyses. She also aids facilities in developing training, engineering standards, and corporate policies related to management of dust explosion and chemical reactivity hazards and risks. Recently she worked with the Department of Homeland Security to provide training for numerous professional organizations on the new Chemical Facility Anti-Terrorist Standards.

Michelle Murphy

After beginning her career as a process development engineer for Exxon Chemical Company, Ms. Murphy has spent 12 years as a process safety consultant, first with Arthur D. Little, Inc. and now with ioMosaic. Her wide variety of experience includes all aspects of process safety and risk management, including process safety program development, thermal hazard analysis, dust explosion testing and hazard identification, emergency relief system design and process hazard analysis. She has a B.S. in Chemistry and an M.S. in Chemical Engineering.

Molly Myers, P.E.

Ms. Myers, a licensed Professional Engineer in the state of Missouri, has a B.S. in Chemical Engineering and a M.S. in Engineering Management. She worked in the chemical and pharmaceutical industry at Monsanto and Mallinckrodt for over 19 years before joining ioMosaic. Her background is mainly in capital project design, with some experience in chemical plant operations. She has been involved in numerous safety reviews utilizing HAZOP and What-If methodologies and developed a company guideline and training for Nitrogen Inerting of process equipment.

Guest Speakers from OSHA and Georgia Fire Marshal's Office:

Wes Hoffman (OSHA Compliance Officer)

Wes Hofmann has been with the United States Department of labor for approximately 8 years. Before joining the USDOL, he worked in industry for approximately 22 years. Over part of this period, Mr. Hofmann worked as an engineer in the coal mining arena (ventilation systems for coal dust and gas liberation control). He has held various engineering and operations positions over his career. He has taken project(s) from the infant initial paperwork design to actual operations level. He is a graduate from The Pennsylvania State University (Penn State) with a B.S. in Engineering.

Chief Lawton "Carl" Smith Jr.

Represents the 3rd of 4 generations of firefighters at the Thunderbolt Volunteer Fire Department. Chief Smith responded as soon as the first set of calls went out about the explosion at Imperial Sugar. Upon arrival Chief Smith was asked to assist with operations and rescue going on at the time. The next 3 days Chief Smith spent his time serving as the Incident and Deputy Incident Commander for the 12 hour daytime operational periods. He was responsible for coordinating all search & rescue (recovery) operations, as well as all fire suppression activities. He also assisted with logistical and resource needs as well as planning activities for future operational periods.

Co-Sponsorship by SOCMA:

SOCMA: Synthetic Organic Chemical Manufacturers Association

The Synthetic Organic Chemical Manufacturers Association's is committed to serving the batch, custom and specialty chemical industry. A SOCMA membership provides countless opportunities for business development, ensures a seat at the table where laws and regulations are written, and promotes continuous improvement in health, safety and productivity. <http://www.socma.com>.

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 8:30 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

The two and a half day course will be held on September 16 - 18, 2008 at the Omni Majestic Hotel in Saint Louis Missouri at 1019 Pine Street. There is a small block of rooms on hold for this course for \$139.00 per room per night (not including taxes). To get the rate, reservations must be made by August 16, 2008. To make a reservation to stay at the Omni Majestic please call reservations at 314.436.2355 or online at www.omnimajestic.com. Participants are responsible for making their own hotel reservations.

About ioMosaic

ioMosaic Corporation is a leading provider of safety and risk management 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.



Course Registration

Please complete the information to register and fax to: 603.251.8384
or mail: *ioMosaic Corporation, Effective Training, 93 Stiles Road, Salem, NH 03079.*
You can mail your check payment with a copy of this registration form or call for assistance.
Prepayment guarantees your seat.

PHA Leadership Training - Specific to Dust Explosion Hazards

Two and a half days of training

Fee: \$1,900.00

Training Location

Omni Majestic Hotel
1019 Pine Street
St. Louis, Missouri 63101
P: 314.436.2355
www.omnimajestic.com

Name:

Company:

Title:

Address:

City:

State

Zip

Phone:

Fax:

Email:

Comments:

Credit Card Type:

Number:

Expiration:

Name On Credit Card:

ioMosaic Corporation Educational Services



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