



MUE110

Flare & Pressure Relief Systems in Process Plants

Course Introduction:

The success of every company depends of each employee's understanding of the business's key components. Employee training and development will unlock the companies' profitability and reliability.

The unit on stream time is an indication of operations training. A first quartile operating units on stream factor is greater than 97%. If the on stream factor is below 97% a review of operation training and development is warranted. If on stream factor or average years of operating experience is declining a review of operations training and development should be considered.

This seminar was designed to serve as a guide to building the operation and maintenance group's excellence in the processing industry. Understanding the fundamentals of process unit operations equipment will greatly improve your team's operational excellence and safety. The operation and maintenance groups are the process unit's first line of defense; the flare is the last line of defense.

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- ✓ Provide an understanding of the fundamentals of process unit operational equipment in the processing industry
- ✓ Reinforce their practical experience and broaden their data base to those who are with experience in the processing industry
- ✓ Create a platform to build their data base of experience to those who are new in the processing industry
- ✓ Focus on the core building blocks of the process unit equipment
- ✓ Emphasize process unit equipment fundamentals by operations and maintenance personnel and equipment troubleshooting techniques

Sectors Covered Include:

- Furnaces
- Boilers and Steam Systems
- Steam Turbines, Pumps, and Compressors
- Distillation
- Piping and Heat Exchangers
- Process Control Systems
- Electrical Systems
- Catalyst and Molecular Sieve Systems
- Cooling Water Systems and Treatment
- Process Utilities
- Relief Valve and Flare Systems

Who Should Attend?

This course is intended to the people who are making day to day decisions regarding operation, design and economics of processing plants:

- 1st line Operations personnel
- Operation Supervisors
- 1st Line Maintenance Personnel
- Maintenance Supervisors
- Senior Plant Supervisors
- Operations Engineers
- Process Support Engineers
- Design Engineer
- Cost Engineers
- Ideal for veterans and those with only a few years of experience who want to review or broaden their understanding in the Processing Plant Operations
- Other professionals who desire a better understanding a subject matter

Course Outline:

Day 1:

INTRODUCTION

- Overview of the Processing Industry
- Chemistry of the Processing Industry
- Safety for the Operation and Maintenance Groups Furnaces
- Overview of Process Furnace
- Safe Commissioning of a Process Furnace
- Economics – Excess Air Control, Flame Pattern
- Trouble Shooting
- Maintenance Guidelines
- Safety

BOILER AND STEAM SYSTEMS

- Overview of Boilers and Steam Systems
- Safe Commissioning of Boilers and Steam Systems
- Economics – Excess Air Control, Denim Water and Condensate
- Troubleshooting
- Maintenance Guidelines
- Safety

Day 2:

STEAM TURBINES, PUMPS AND COMPRESSORS

- Overview of Rotating Equipment
- Safe Commissioning of Rotating Equipment
- Economics – Steam Temperature, Preventative Maintenance
- Troubleshooting
- Maintenance Guidance
- Safety

DISTILLATION

- Overview of Distillation Equipment
- Safe Commissioning of Distillation Equipment
- Economics – Reflux Optimization, Re-boiler Optimization, Tray Efficiency
- Troubleshooting
- Maintenance Guidelines – Tray verses Packing
- Safety

Day 3:

PIPING AND HEAT EXCHANGERS

- Overview of Piping and Heat Exchanger Equipment
- Safe Commissioning of Piping and Heat Exchanger Equipment
- Economics – Heat Exchanger Monitoring
- Troubleshooting
- Maintenance Guidelines
- Safety – Pressure Concerns

ELECTRICAL SYSTEMS

- Overview of Electrical Systems
- Safe Commissioning of Electrical Systems
- Economics – Lighting Guidelines
- Troubleshooting
- Maintenance Guidelines
- Safety – Wire Temperature Monitoring

Day 4:

CATALYST AND MOLECULAR SIEVE SYSTEMS

- Overview of Catalyst and Molecular Sieve Systems
- Safe Commissioning of Catalyst and Molecular Sieve Systems
- Economics – Life Evaluation
- Troubleshooting

- Maintenance Guidelines
- Safety – Temperature Monitoring

COOLING WATER SYSTEMS AND TREATMENT

- Overview of Cooling Water Systems and Treatment
- Safe Commissioning of Cooling Water Systems
- Economics – Cost/Benefit Evaluations
- Troubleshooting
- Maintenance Guidelines
- Safety – Nitrogen Issues

Day 5:

RELIEF VALVE AND FLARE SYSTEMS

- Overview of Relief Value and Flare Systems
- Safe Commissioning of Relief Valve and Flare Systems
- Economics – Evaluating of Flare Sweeps
- Troubleshooting
- Maintenance Guidelines
- Safety – temperature Issues

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

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Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion

- Presentation

Course Fees:

To be advised as per the course location. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee/Tea
08:20 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Coffee/Tea/Snacks)
13:30 - 15:00	Last Session

