

Training Title

OPERATIONS ABNORMALITIES & PLANT UPSET

Training Duration

5 days

Training Venue and Dates

PE340	OPERATIONS ABNORMALITIES & PLANT UPSET	5	01 – 05 December, 2019	\$4,250	Dubai, UAE
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In any of the 5 star hotels. The exact venue will be informed once finalized.

Training Fees

- 4,250 US\$ per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Buffet Lunch.

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

TRAINING DESCRIPTION

This course is designed to enable the participants to enhance their knowledge on process operation, handling operations abnormalities& upsets, troubleshooting and take corrective actions at different upset conditions to maintain production with quality requirements, without compromising safety.

Course objectives and overviews are suitable different disciplines audience, particularly for Middle Management personnel, Specialist, Supervisors working from different organizational departments.

This course presents the best practices from High Reliability Organizations (HROs) with respect to both excellence and safety. HRO is a term that refers to industries such as oil and gas, process, nuclear and aviation, where they possess a high degree of reliability despite their hazardous environment. It shows how organizations can learn from failures and near misses, as well as from other industries.

Course will stress on Process Plant Optimization which plays very important role in today's industrial world. For optimization benefits to be substantial, cost of production including operation interruptions must be kept to a minimum. This requires effective management of maintenance operations and optimization of equipment and plant reliability and availability. This also involves effective inspection and maintenance strategies, planning methods. Plant optimization can be an effective way to achieve improved profitability

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TRAINING OBJECTIVES

On completion of the course candidates will get good understanding and knowledge on the following:

- Equipment common operating parameters & controls
- Process control and safety
- Monitoring the process and control or minimise process abnormalities and plant upsets.
- Preparatory measures and knowledge in anticipating process upsets.
- Corrective actions required in different scenarios and document it.
- More understanding of the process trouble shooting at different scenarios.
- Process plant & equipment optimization techniques.
- Process parameters measurement principles and commonly used devices.
- Learn how to identify the potential for reduction of energy consumption
- To enhance the business focus of participants and equip them to make more contributions to sustainable plant profitability
- Equipment start up / shutdown from / to different modes.
- Vessel start-up after major maintenance job, power failure, stand by, different ESD levels etc.
- Ability to guide new comers on process trouble shooting & Optimisation.

WHO SHOULD ATTEND?

- Production Supervisor / Engineers
- Process plant technical professionals: engineers, technicians and operators
- Engineers, supervisors, operations and maintenance personnel, as well as for project engineers
- Engineering and technical personnel involved in improving process plant profitability and energy efficiency

TRAINING METHODOLOGY:

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions, and motivate everybody find the right answers.

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You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work& Practical Exercises
- 20% Videos& General Discussions

DAILY OUTLINE

Day 1

1.1 Overview of Process plant Operation

- Process Overview
- Operating manuals
- Location of equipment and pipes
- Standard Operating procedures
- Equipment capacity
- Safety devices on equipment
- Interconnecting stations
- Communication devices

1.2 Preparations for handling process plant upsets

- Monitoring process parameters
- Safety first
- Hazards identification & mitigation
- Alarms & shutdown system knowledge
- Control room and field communications and interactions
- Logging of process parameters and analyzing abnormal readings
- Abnormal noise, vibrations and chattering
- Safety valve pip up
- Start up and shutdown procedures-updating
- P& ID up dating & availability

Day 2

2.1 Process Control & system safeguards

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- Process parameters
- Process parameters measurement
- Basic control loop
- Components of control system
- Feed back control
- Different types of control system
- Split range control
- Cascade control
- On-off controls
- Tuning of controllers
- Shutdown system
- ESD Testing

2.2 Documentation & system for follow ups

- Equipment out of service
- Long term isolation
- Inhibitions and overrides
- Deal leg flushing
- LO/LC valves
- Alarms and shutdown checks
- Function checks of inter locks

2.3 Standard Operating Procedures

- SOPs
- Testing and updating
- Training
- Updating P&IDs

Day 3

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3.1 Safety Systems and Risk Management

- Safety first
- Hazards identification & mitigation
- Learning from failures
- Analyzing near misses, incidents & accidents
- Risk assessment, Choice of case studies
- Types of recommendations

3.2 Safety Analysis while design

- Feed
- HAZOP-Conduct using a selected P&ID
- LOPA
- MOC

3.3 Continuity of Operations – Plant Systems Reliability

- Coping with risks
- Risk Assessment
- Risk Evaluation
- Defining reliability and resilience
- Reliability Centered Maintenance (RCM) techniques
- Fault Tree Analysis (FTA)
- Practical examples and case studies

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Day 4

4.1 Overview of Optimization Technologies

- Overview of Optimization Technologies for Process Plants
- Elements of Process Plant Optimization Procedure
- Constraints in Optimization: Production, Operation, Economy and Environment
- Correlation between Process Optimization and Process Control in Typical Process Plant

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4.2 RCA (Root cause Analysis)

- Importance
- Different methods for RCA
- Conduct RCA as case studies, involving participants

4.3 Maintenance Management System

- Optimization of Utilization of Piping Systems and Pipelines
- Optimization of Utilization of Pumps, Compressors and Fans
- Optimization of Maintenance Management System & Frequency
- Optimization of Spare Parts Management through Predictive Maintenance
- Optimization of Repair and Alteration Programs in Accordance to Existing Codes

Day 5:

5.1 Minimization of Equipment Failure

- Risk Based Inspection (RBI)
- Procedures for Minimizing Risk of Equipment Failure
- Fitness For Service (FFS) Analysis and Estimate of Remaining Life of Equipment
- Optimization of Plant Economy through Planned Equipment Replacement

5.2 Reliability, Availability and Effectiveness

- Relationship between Plant Reliability and Availability
- Optimization of Plant Reliability
- Optimization of Plant Availability through Improved Maintenance
- Analysis of Effectiveness of Individual Equipment
- Optimization of Overall Plant Effectiveness
- Workshop: Examples and Solutions

5.3 Best Practices for Energy Consumption

- Optimization Strategies Aimed at Energy Consumption Reduction
- World Standards and Benchmarking Guidelines
- Best Practices in Process Plant Energy Management

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- Energy Conservation Check List in Typical Industrial Plants
- Optimization of Heat Production and Steam Distribution and Consumption

5.4 Action items compiling for follow up

- Concluding sessions
- Post Test & assessment
- Feedback from Attendees
- Certificate distribution
- Photo session.

NOTE:

Pre & Post Tests will be conducted

Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.



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