



PCE109

Process Plant Monitoring, Optimization and Energy Conversion Skills

Course Introduction:

This course will feature the importance and relevance of the constant need to monitor and adjust Process Plant operation to maintain the optimum mode that produces the most efficient results, consistent with safe and reliable operation.

Plant integrity and reliability is the cornerstone of process plant optimization. For optimization benefits to be sustainable, production interruptions must be kept to a minimum which requires effective management of degradation processes that affect equipment and systems and effective inspection and maintenance strategies, plans and methods. Plant optimization can be an effective way to achieve improved profitability without the large investment associated with building a new plant.

This course will focus the following:-

- Risk Based Integrity Principles
- Process Plant Economics
- Industrial Energy Management Best Practices
- Implications of Plant Optimization Activities
- Energy Conservation Opportunities

Course Objectives:

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

- ✓ Recognize and understand what plant optimization and energy conservation is
- ✓ Apply the business focus and equip them to make sustainable plant profitability
- ✓ Appraise the most attractive opportunities to identify energy savings
- ✓ Describe the managerial tools needed to effectively optimize plant operations

Who Should Attend?

This course is intended for all levels of personnel in a process plant environment. It will enable them to understand the design considerations, construction details and operational parameters associated with process heat exchangers. This course is suitable to a wide range of process plant professionals but will greatly benefit such as; Process Supervisors, Plant Operators, Operations Engineers as well as those engineering and technical personnel involved in improving process plant, petrochemical plant and refinery profitability and energy efficiency.

Course Outline:

Day 1:

Module 1: Process Plant Operation, Integrity and Reliability - Overview

- Asset Integrity Management (AIM)
- Plant Integrity and Reliability
- Risk Based Integrity (RBI) Approach
- Operation and Maintenance Impacts on Plant Integrity and Reliability
- Asset Management and Maintenance Management: Process Improvement
- Process Plant Economics

Day 2:

Module 2: Process Plant Optimization

- Process Control Basics
- Elements of Process Plant Optimization
- Components Required to Optimize Industrial Processes
- Process or Mathematical Model of Process and Process Variables
- Application of Simulation Technology to Plant and Control
- The Basics of Heat Integration

Day 3:

Module 3: Industrial Energy Management – Energy Efficiency: Good for Business and for the Environment

- Energy Use and in Process Industry
- Energy Management Standard: Details
- Energy Management Standard: Features
- Obstacles for Energy Management Programs

Day 4:

Module 4: Energy Conservation Opportunities

- Energy Audit
- Energy Audit Types
- Benchmarking Energy Intensity and Usage
- Technology Options – New Energy Efficient Technologies
- Technical and Economic Evaluation of Potential Opportunities: Renewable Energy

Day 5:

Module 5: Implications of Plant Optimization Activities

- Implications of Plant Optimization Activities
- Impact of Optimization Activities and Technological Modifications to the Plant
- Technology Licenses
- Impact on Human Resources
- Good Safety - Good Business
- Safety Costs: Costs of Injuries

Course Certificate:

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

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, and-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	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session

