

**Training Title**

**PROCESS TROUBLESHOOTING & PROBLEM SOLVING TRAINING**

**Training Duration**

5 days

**Training Venue and Dates**

REF					
PE02					Abu Dhabi,
5	Process Troubleshooting & Problem Solving	5	07-11 Jan	\$4250	UAE

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**

Excellent Troubleshooting skills are considered a core competency for 'Best-in-Class' industrial companies. If your company's goals include minimizing downtime then this workshop is a must because it delivers rapid, safe Troubleshooting.

**WHO SHOULD ATTEND:**

The course is designed for Process Engineers, Shift Supervisors, Senior Operators & Operators who require a wider and deeper appreciation troubleshooting and improve their performance and operation

**TRAINING OBJECTIVES:**

At the end of the course, the attendees will be updated with the following:

- To Develop a structured approach to troubleshooting and problem solving which uses a common terminology and shared understanding
- To point the way to continuous improvement in the way you run your processes and make incremental efficiency gains
- To understand the difference between having a techniques manual on the bookshelf and actually making it work
- To identify the motivated people who should be the champions of troubleshooting and problem solving and who should just follow
- To understand work practices which allow success in troubleshooting and problem solving

**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. 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.

All presentations are made in excellent colorful power point. Very useful Course Materials will be given.

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

### **TRAINING OUTLINE:**

#### **1- Troubleshooting Crude Distillation Unit**

- Decrease fractionation
- Inadequate steam stripping
- Energy Wasters
- Overhead corrosion
- Preflash Tower
- Tray Capacity
- Reboilers
- Reflux problems

#### **2- Troubleshooting of Naphtha hydrodesulphurization**

##### **DHDs Unit**

- 1- Reactor temperature increases
- 2- Reactor quench control
- 3- Reactor pressure drop
- 4- Reactor catalyst bed maldistribution
- 5- Reactor section operation
- 6- Reactor hydrogen partial pressure
- 7- High pressure separator level control and pressure control
- 8- Corrosion problems
- 9- Foaming in high pressure separator/amine scrubber

#### **3- Troubleshooting of continuous catalytic reforming (CCR unit)**

- 1- Low reactor  $\Delta T$
- 2- High reactor  $\Delta T$
- 3- Low Hydrogen production purity
- 4- Low Reformate yield
- 5- High Cooking

- 6- High Reactor  $\Delta P$
- 7- Low Reactor  $\Delta P$
- 8- Loss of chloride injection

#### 4- Troubleshooting Amine System

- Dirty Amine
- Reboiler corrosion
- Foaming In scrubber
- loss in Amine Strength
- Reclaimer operation
- Energy Reduction
- Poor Sweetening

#### 5- Troubleshooting Sulfur Recovery Unit ( Cluse Reaction )

- Measuring Conversion
- Finding lost conversion
- Start up problems
- Increased Pressure Drop
- Maximizing plan capacity

#### 6-Problem solving Technique

- Gathering information
- Facts not views
- Analysis Data
- Define the problem
- Root Coues Analysis
- Suggest alternatives
- Select Solution
- Take Action
- Case Study
- Back to Normal operation
- Reporting

#### 7-Troubleshooting for Centrifugal Pump and Compressor Problems

- Centrifugal Pump surge
- Cavitations
- Rough running pump
- Capacity decrease
- Pump, Noise
- Leaking seal

#### 8-Troubleshooting of process heater

- Insufficient Draft
- Controlling Air supply
- Energy Saving Ideas
- Excessive Draft

- Insufficient air
- Oil burning
- Hot Tubes
- Expanding Heater Capacity

**9-Troubleshooting for Vapor liquid separation problems**

- High liquid level
- Foaming
- Entrainment

**10-Case Studies for Gas dehydration using Liquid or Solid Desiccant**

Last Day Review & Discussions will be carried out



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