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Process Plant Startup, Commissioning & Troubleshooting

15 - 19 April, 2012 Dubai, UAE

Eng. Ishak Abd El-Malak Girgis

Freelance Instructor in Petroleum Processing



In Apex

We believe that continuous learning is essential to enhance individual competency and business excellence

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COURSE OVERVIEW:

The initial start-up of any plant, irrespective of size, type, or industry, is a unique occurrence. Therefore, start-up poses some special problems. Lack of experience in dealing with these problems has frequently resulted in prolonged and costly startups. This course will provide guidelines for all those involved in the execution of a project on how to achieve a successful plant start-up. The requirements for start-up oriented thinking at all stages of the project, from engineering to commissioning, will be demonstrated.

The course covers estimating of start-up costs, personnel requirements, and resources. It defines the vital role of project management and plant personnel in the preparation and planning for successful start-up of any process plant. Emphasis is on effective planning and use of available resources, both material and manpower. Troubleshooting performed during the actual start-up can be very expensive and must be done as effectively as possible. Effective troubleshooting can minimize the time and cost of going from the initial start-up to full production. The last day will provide a review of techniques and discussion of numerous examples to develop skills in troubleshooting.

Participant interaction is welcome, to take full advantage of the range of viewpoints and experience and to examine typical startup problems, both technical and manpower related, and their solutions. The faculty has extensive start-up experience in a wide range of processing units including material handling, mineral processes, and chemical, petrochemical, and refining operations, and will be available to discuss individual start-up problems.



WHO SHOULD ATTEND?

Plant Operation Engineers, Maintenance Engineers, Planner and Supervisors those involved in project execution and plant start-up in any process industry. The greatest benefit arises from the application of these start-up oriented ideas throughout a project, beginning at the conceptual phase. The practical techniques and examples provide useful insights that are valuable at any stage of project execution and preparation for start-up.

COURSE OBJECTIVES:

During this Course you will learn to:

- About the six key stages of the commissioning process & Associated with first-time start-ups.
- You will gain knowledge of the problems and their sources.
- You will have the necessary skills for anticipating and avoiding financial, technical, operational, and organizational problems associated with start-up.
- To develop and overall commissioning and plant start-up strategy
- To deal with machinery and equipment specific commissioning issues
- How to manage issues dealing with the commissioning of Electrical, Instrumentation and Utilities Systems
- To develop a overall commissioning management plan, resource plan and budget
- Troubleshooting and Problem Solving strategies which can be applied during commissioning

TRAINING METHODOLOGY:

Process Plant Start-up and Commissioning is a hands-on, stimulating learning experience. The program will be highly interactive, with opportunities to advance your opinions and ideas. Participation is encouraged in a supportive environment. To ensure the concepts introduced during the program are understood, they will be reinforced through a mix of learning methods, including lecture style presentation, open discussion, case studies, simulations and group work.

COURSE OUTLINES:

Module (01) Initial Operating Plan

- 1.1 Introduction
- 1.2 Refinery Mission and Objectives
- 1.3 Operation Reporting
- 1.4 General Objectives
- 1.5 Core Values, Policies and Strategies

Module (02) Start-Up Manpower and Management

- 2.1 A-Start-Up Leadership
 - 2.1.1 What is leadership?
 - 2.1.2 The Definition of Leadership
 - 2.1.3 What are important Leadership personality traits?
 - 2.1.4 Leadership Success for Plant Start up
 - 2.1.5 Relationship between Power and Leadership
- 2.2 Start-Up Management
 - 2.2.1 Risk Management
 - 2.2.1.1 Bases
 - 2.2.1.2 What to do?
 - 2.2.1.3 Some practices that we use to reduce the risks in units
 - 2.2.2 Safety Management Systems
 - 2.2.3 Emergency Planning and Response

Module (03) Commissioning

- 3.1 Plant Inspection
- 3.2 Cleaning of Piping and Equipment
- 3.3 Tightness Testing
- 3.4 Heaters Dry-Out Procedure
- 3.5 Electrical Equipment Inspection
- 3.6 Electrical and Instrumentation Loop Check
- 3.7 Method Statement for Instrumentation Loop Test

Module (04) Start-up Safety and Environmental Issue

- 4.1 Pre-Start-Up Safety Review
 - 4.1.1 Introduction
 - 4.1.2 Requirement for Pre-Start-Up Review
 - 4.1.3 Pre-Start-Up Safety Review Execution
- 4.2 Hazard and Operability Studies (HAZOP)
 - 4.2.1 Introduction
 - 4.2.2 Team Composition
 - 4.2.3 HAZOP Chairman

- 4.2.4 Meetings Schedule and Duration
- 4.2.5 Reviewing a System
- 4.2.6 Progress Recording
- 4.2.7 HAZOP Reports
- 4.2.8 Post HAZOP Modifications
- 4.2.9 Final Safety Review
- 4.2.10 Audits

Module (05) Equipment Start-Up and Troubleshooting

- 5.1 Desalter
 - 5.1.1 Desalter Preparation for Start-up
 - 5.1.2 Desalter Normal Start-Up procedure
 - 5.1.3 Desalter Start-Up Troubleshooting
- 5.2 Frequent Problems with Separators and Vessels
- 5.3 Heat Exchanger Operation and Troubleshooting
- 5.4 Fired Heaters
- 5.5 Boilers
- 5.6 Fractionation Towers
- 5.7 Pumps & Compressors

Module (06) Process Start-Up

- 6.1 Start-up Procedure
 - 6.1.1 Air Purge from Unit
 - 6.1.2 Fuel Gas Introduction
 - 6.1.3 Cold Circulation
 - 6.1.4 Warm-Up and Establish Normal Operating Conditions
- 6.2 Process Normal Operation
 - 6.2.1 Desalter
 - 6.2.2 Heaters
- 6.3 Specific Routine Operations
 - 6.3.1 Heater Decoking Procedure

Module (7) Process Shutdowns and ESD

- 7.1 Normal Shutdown Procedures
- 7.2 Process Emergency Shutdown
 - 7.2.1 Process Failures
 - 7.2.2 Utility failure
- 7.3 Major Upsets
 - 7.3.1 Heater Tube Rupture

Course Summary & Conclusion

About Instructor

Eng. Ishak Abd El-Malik Girgis

Freelance Instructor in Petroleum Processing

Eng. Ishak has Bsc in Petroleum Refining Engineering from Faculty of Petroleum, Suez, 1973. He has an extensive practical experience in various Oil & Gas fields.

Oil Field Experience:

He worked in oil refining covering the following activities:

Process Equipment Design: Oil & Gas Pipelines, Pumps, Vessels, Towers, Heat Exchange Equipment, and Material & Heat Balance for Process Units

Operation follow-up and troubleshooting and problems solving for the following units: Atmospheric distillation, Vapor Recovery, Re-Run, Catalytic Reformer, Naphtha HDT, Middle Distillate HDT, and Isomerization units.

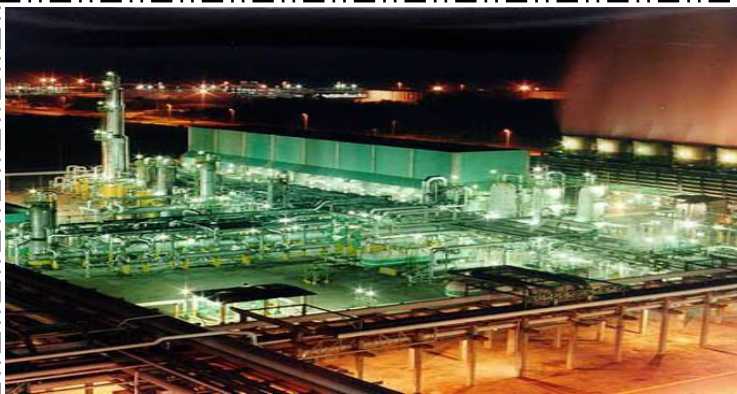
Operation follow-up for the Utility units: Water Treatment, Steam Generation, Air System, Nitrogen Production, and Waste Water Treatment

Gas Field Experience

He worked in construction, commissioning, start-up, troubleshooting and problems solving and operation of gas processing plants such as: Belayem Petroleum Co. (Petrobel) in Egypt, Suez Oil Co. (SUCO) in Egypt, and Bader El Din Petroleum Co. (Bapetco) in Egypt

Training Experience

He conducted so many technical training courses in Egypt, Kuwait, Oman, Syria, Libya, Dubai, Abu Dhabi, Sudan, and Saudi Arabia covering the following subjects: oil production facilities operation, distillation technology, gas processing operation, LPG technology, rotating equipment, heat transfer equipment, water treatment, catalyst & convergence process.



COURSE FEE

Investment Fee of **3500 USD** will be charged for the course fee.

PAYMENT METHOD

A confirmation letter will be sent upon your registration.

Note that full payment must be made prior to the event.

Only those delegates who have paid in full will be admitted to the event. All payments should be to APEX Account:

HSBC Bank Middle East limited,

Jebel Ali Branch, Dubai, UAE

A/C: 035 - 626472 - 101

Swift Code: BBME AEAD

CANCELLATION

If you are unable to attend the course you may send a substitute delegate.

Cancellation should be made 20 days prior to the course conduction. Failure to cancel within 10 days will be required to pay the course fee in full amount.

REGISTRATION FORM

Name (Mr./Ms.) _____

Position _____

Email _____

Department _____

Company _____

Address _____

Country _____ Zip Code _____

Telephone No. _____

Fax No. _____

CONTACT DETAILS



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