

PLANT MODIFICATION FOR PERFORMANCE AND PROFIT MARGIN IMPROVEMENT

Introduction

In today's competitive world, process plant operators and managers have to achieve profitability criteria ensuring plant safety, quality of products and meeting environment stipulations. This puts enormous pressure to run the plant with optimum energy consumption and peak performance of the processing equipment and systems.

This program presents practical concepts for optimal energy conservation and ensuring maximum efficiency out of each process equipment system in a plant. Each concept is substantiated by real life case studies of plant performance improvement with minimum modification and shortest pay-back on capex. These concepts can also result in reduction in pollution, improvement of capacity and redundancy of unproductive equipment.

A typical process plant configuration is first analyzed to identify potential areas of improvement. Techniques like simulation, modeling and pinch technology are then applied for this purpose. The target areas of the program are distillation columns, heat exchanger train, furnaces and even reactor modeling.

The course also covers methodology of execution of the concepts with real life examples. The lectures and programs on the subject have been appreciated in World Refining Conference at Abu Dhabi and by major international companies like Technip.

Who should attend

1.	Engineers involved in Technical Services in refinery and petrochemical plants covering process, mechanical, piping and instrumentation aspects.
2.	Engineers responsible for operations and performance improvement of the plant. Research and development engineers in an operating company.
3.	Managers and decision makers responsible for plant performance and profitability.



Course Content

No.	TOPIC	DESCRIPTION
1.	Basic Definitions and Concepts	Typical process configuration, terminologies, target areas of performance improvement. Description of the tools used for performance analysis, concepts of simulation, modeling and pinch technology. Global optimization concept in a plant.
2.	Heat Exchanger Train Synthesis and Optimization	A typical heat exchange system configuration, potential of improvement in energy recovery, simple example of development of appropriate scheme, multiple exchanger network analysis, case study of a refinery, energy saving targets and capex. Quiz session.

No.	TOPIC	DESCRIPTION
3.	Distillation Column Targeting	Basic concepts, distillation column energy profile, application of pinch concept for improved energy conservation, modification of reboiler, condenser and other energy systems, modification of column configuration including feed location and reflux. Case study.
4.	Total Site Process Integration	Concepts of total site process integration by using pinch technology through optimization of steam power network of an entire refinery complex. Case study.
5.	Evaluation and Improvement of Equipment Performance	Modeling to improve equipment performance such as ejectors, dryers, venturi scrubber, fired heaters and even reactors. Case studies.
6.	Conclusion	Interactive session to exchange real life experiences on performance improvement by the participants. Question Answer Session.

Methodology of presentation

- Microsoft Power Point colorful slides packed with information.
- Highly interactive with total involvement of the participants.
- Interesting and Interactive Quiz Sessions, group tasks for better assimilation.