Eurotek
Refining Services Ltd

Our Business is Knowledge Transfer

Improving Refinery Energy Efficiency Course

A Eurotek training course

ERS Improving Refinery Energy Efficiency Course

An introduction:

The ERS Refinery Processes training course is a 4-module course for professionals working within the refining business.

Increased fuel cost and stringent environmental regulations impose additional pressure on otherwise tight refinery margins. Energy has long been recognised as the largest single operating cost in a refinery, but nowadays the energy efficiency is one of the differentiators that determine the future of an operating company.

Energy, however, can be successfully managed. Through comprehensive energy management programmes refiners ensure operated in an optimum manner, while their investments projects related to energy efficiency are strategically selected.

Learning objectives:

Upon the completion of the course, participants will have gained solid understanding of the following:-

- Refinery energy balance and where is energy consumed in a refinery
- How to assess the actual energy efficiency of an operating refinery
- Specific energy characteristics of refinery's various process units and improvement potential
- Energy efficient operation of refinery utility systems (steam and power)
- Energy efficiency of refinery equipment
- Energy saving techniques and development of energy saving projects

Who should attend?

Professionals working in the petroleum
processing industry will benefit from this
course, especially those with a responsibility for energy management and efficiency. The material presented is relevant to all engineers working on processing units in the industry, including operations, design and maintenance personnel.

Job Titles/Functions Appropriate for the
Course Include:

- Process, plant and project engineers
- Thermal and stationary equipment engineers
- Personnel responsible for inspection, maintenance and reliability

Shutdown planners

Description:

The courses present the up-to-date methodologies and techniques that are used to assess the energy efficiency of an oil refinery and introduces systematic procedures for reducing the consumption and the energy bill. The courses can be considered as a tool box for refinery energy co-ordinators and process engineers and managers who want to become conversant with all aspects of refinery energy efficiency.

. Much of the course time is dedicated to :-

(1) developing thorough understanding of refinery energy topics, particularly how much, where, why and at what efficiency the energy is consumed, and

(2) introducing the practical application of energy saving techniques.

Simulation examples are used throughout the course to enhance the understanding

Course Presenter:

Dr Zoran Milosevic was a Pincipal Consultant and an oil refinery specialist at KBC Process Technology, where he is responsible for development of KBC technology and services in the refinery energy conservation area. Zoran has 35 years of experience in refinery operation, process design and consulting. He is a Chemical Engineer from Lehigh University, Pennsylvania (US) and a Fellow of the Institution of Chemical Engineers.

He also a Teaching Fellow of the Royal Academy of Engineering, and a Visiting Professor at the University of Surrey. His main professional expertise is the optimisation of process plant operation with emphasis on profitability improvement and energy saving in oil refineries.

In his 22 years with KBC, he conducted over 60 such margin improvement studies and energy conservation programs worldwide. He has taught at various institutions and has presented numerous training courses on

energy efficiency, Pinch Technology, energy efficient process design, and global energy.

Module 1

- Refinery Energy Balance
- Energy Efficiency Effect on Refinery Profitability
- Benchmarking energy efficiency
- Potential for improvement
- Fuel, power and steam pricing – Energy Economics

Module 2

- Key areas of inefficiency
- The use of pump-arounds
- Reflux optimization
- Heater efficiency
- Use of advanced process control techniques.

Module 3

- Refinery Utility System
- Steam generation
- Power generation
- Turbines, cycles, efficiencies
- Cogeneration and its benefits
- Optimisation of refinery Steam & Power system

Module 4

- How the integration works?
- The basics of Pinch Technology
- Pinch Technology for refinery operators
- Revamping preheat trains for improved energy efficiency.

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