



FM110: Oil Refinery Cost Management: *Effective Energy Management*





Training Description:

In today's modern refining environment, the use of innovative cost management practices that can accurately allocate refined intermediate and product manufacturing costs, may assist refiners to optimize their production, improve their profitability and competitiveness.

Cost management is concerned with the process of planning and controlling the budget of a project or business. Cost management can also be applicable to refinery management systems and it can be a very important part of the refinery production processes. It must be appreciated however that production costs are a synthetic index that can reflect the effectiveness of production planning and scheduling. How to successfully control and manage production costs is a complex set of issues for refineries but it can be used to monitor and control refinery unit performance.

This intensive training course will assist in creating cost structures for refinery process units and assist in allocating costs to individual refinery intermediates and finished on-specification products. Important aspect of process plant optimization is related to system energy management and energy consumption reduction. Furthermore, process monitoring that includes advanced controls and new technologies also present opportunities for refinery optimization. Additional opportunities can include Crude unit utilization with opportunity crudes of lower quality and price.

This course it will assist in examining individual process equipment such as atmospheric and vacuum distillation equipment, catalytic and thermal processes, heaters, furnaces and steam boilers, heat exchanger integration, rotating equipment efficiency including pumps and compressors. Oil refinery cost management will provide a comprehensive review of the various aspects of refining cost management, which is the cornerstone for a viable plant profitability and optimization.

The course will highlight:

- Lectures, tutorials and group work in all areas of refinery cost management
- Actual Case Studies that illustrate technical solutions with observable results benefits
- Use of basic cost management software tools in excel will be made available to participants
- Transfer of instructor's broad hands-on industrial experience
- Open reflection on real life situations in participants' own refineries

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Determine by various techniques the cost of individual streams in the refinery and individual processes
- ✓ Use these costs to calculate the enhancement potential for blending lower cost, on-specification products
- ✓ Optimize refinery utility systems such as cooling water, steam and power generation
- ✓ Apply energy saving techniques to develop energy saving projects
- ✓ Enhance the production planning activities of the refinery via cost management

Personal Impact:

- ✓ Practical ideas for developing and allocating cost structures for refinery process unit
- ✓ Enhanced competency in making a more effective contribution to strategic and operational planning



- ✓ Up-to-date understanding of main trends in refinery margins
- ✓ Greater confidence in dealing with strategic and operational risk
- ✓ Familiarization with state-of-the-art spreadsheets for cost management
- ✓ Improved ability in appreciating that production costs are a synthetic index that directly affects the bottom line

Organisational Impact:

- ✓ Improved creation of cost structures for refinery process unit production planning and scheduling
- ✓ Greater commitment to the process of planning and controlling costs and budgets
- ✓ More rapid reaction to changes in the business environment
- ✓ Closer alignment of strategic and operational goals
- ✓ More cohesive system energy management
- ✓ Improved planning and scheduling approach with sustainable plant profitability and optimization

Training Designed for:

This course is intended for Refining Oil & Gas Field Engineers, Process plant energy managers/coordinators, all professionals involved in Production, Planning and Scheduling, Blending professionals, Financial Analysts

Training Program:

DAY ONE:

- ❖ PRE-TEST
- ❖ Introduction
- ❖ Overview of Cost Management
 - Introduction to cost management
 - Resource planning
 - Cost estimating
 - Cost budgeting
 - Cost control
 - Energy and its Effect on Refinery Profitability
 - Refinery material & Energy Balance
 - Energy Benchmarking
 - Fuel, power and steam costing methodology

DAY TWO:

- ❖ Crude Oil Refining
 - Types of refinery
 - Key Process Units
 - Refinery & Process Utilization
 - Global refining situation
 - Refining costs
 - Refining Investment
 - Size and complexity
 - Location and logistics
 - Maintenance costs



DAY THREE:

❖ Refinery Process Unit Operational Costs

- Physical separation: Crude & Vacuum Unit Distillation
- Product enhancement:
 - Hydrotreating,
 - Catalytic Reforming
 - Fluid Catalytic Cracking
 - Hydrocracking
 - Bottom of the barrel upgrading
- Process simulations
- Advanced Process Control and its benefits
- Blending for Product Specifications
- Blending to reduce product costs

DAY FOUR:

❖ Economic Evaluation and Cost Management

- Cost Estimation
- Refinery Complexity and Netback
- The gross refining margin
- The net refining margin
- Factors that influence margins
- Margins according to region
- Refinery Utility System
- Steam and Power System Optimization
- Energy Efficiency; the Effect of Energy on Refinery Profitability
- Quantification of fuel loss, oil accounting

DAY FIVE:

❖ Process Heat Integration & Equipment Efficiency; Effective Energy Management

- Process Heat Integration
- How heat integration works?
- Introduction to Pinch Technology
- Heat availability Curves and Energy Targeting
- Equipment Efficiency; Effective Energy Management
 - Fired heaters
 - Rotating equipment
 - Heat Exchangers
- Energy Focused Organisation

❖ Course Conclusion

❖ POST-TEST and EVALUATION

Training Requirement:

“Hands-on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”



Please note that the above topics can be amended as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:

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Training & Career Development Department