

Ethylene Furnace Training Course for Plant/Process Engineers

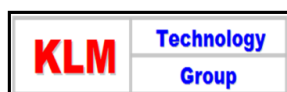
A five-day course on the design and operation of ethylene cracking furnaces



Kuala Lumpur
June 20 - June 24, 2011



Lummus Technology
in cooperation with
KLM Technology Group



Practical Engineering Solutions

KLM Technology Group is a technical consultancy group, providing specialized services, training and equipment to improve process plant operational efficiency, profitability and safety. KLM Technology Group is recognized world-wide as a leader in the areas of distillation simulation, column design and unit commissioning with one of the best track records in the industry.

Our Profile

OPERATION TRAINING



MALAYSIA LNG SDN. BHD.



مؤسسة البترول الكويتية
Kuwait Petroleum Corporation



UNIVERSITI
TEKNOLOGI
MARA



Over the past five years KLM Technology Group has trained over 600 personel from companies around the world



Instructors

Frank McCarthy is currently the Technology Manager for ethylene furnaces at Lummus Technology in Bloomfield, New Jersey, USA. He has 30 years of experience in the process industries and has been with Lummus for 25 years.

In his current role he is primarily responsible for the development, design, and proposal activities for Lummus SRT Furnace's. His duties also include furnace start ups, and troubleshooting operational problems for ethylene furnaces around the world.

Frank has a Bachelor and Masters of Science Degree in Chemical Engineering from Manhattan College in New York City. Frank also has a professional engineering license in the state of New York.

Brian Sullivan is currently a Manager of Plant Performance Improvement at Lummus Technology in Bloomfield, New Jersey, USA. He has 30 years of experience in the process industries and has been with Lummus for the past 23 years, including time spent with their subsidiary Simcon as their Director of Advanced Controls.

Previously, Brian worked for Stone & Webster Engineering Corporation in Boston, Massachusetts, USA. In his current role, Brian supports Lummus Technology's clients with their technical service needs. His responsibility include troubleshooting operational problems, developing procedures, best practices and training materials, assisting with startups for grassroots and revamp projects, and assessing opportunities for performance improvement for clients at more than 50 ethylene plants around the world. He specializes in cracking heater troubleshooting and process control rectification.

Brian has a Bachelor of Science Degree in Chemical Engineering from Rensselaer Polytechnic Institute in Troy, New York and a Masters Degree in Business Administration from Montclair State University in Montclair, New Jersey.

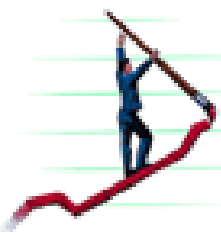
Course Outline

Process Variables

The relationship between operating variables and their effect on yields, conversion, run-length, furnace constraints and methods of alleviation are covered.

Feeds, Yields and Economics

The cracking process is viewed from the feed inlet through the quench fitting. This session covers the impact of feed and furnace design on yield. Overall plant economic trade-offs are discussed.



Kinetic Theory

Characteristics of the cracking reactions and coking for gaseous and liquid feeds as well as special considerations for co-cracking are covered.

Coking and Fouling

The mechanisms of radiant coil coking and TLE fouling for gas and liquid feedstocks are reviewed. Methods of prevention through operating policy are discussed.

Coke Inhibition

Technology, products, and economics are discussed as well as guidelines for making decisions in this area.

Coil and TLE System

How coil design achieves a given yield profile while maintaining an adequate run-length and comparison of different coil designs, including a discussion of coil revamps is covered.



Mechanical Considerations

This session covers the coil support system, TLE design, and transfer line valves.

Firing and Heat Recovery

The impact of combustion, burners and refractory on firebox operation, convection section design philosophy and the maximization of energy efficiency within the context of the overall heat balance are covered.

Burners

Basics for hearth and wall burners, low NO_x designs, firebox heat profile, diagnosing firing problems - symptoms, causes, coil damage, draft and the impact of fuel composition is discussed along with draft and excess air. Burner fouling is also a topic.

Decoking

Decoking criteria and decoking techniques are discussed.



Start-Up and Shut-Down

The philosophy behind each step in the start-up and shut-down procedure are discussed.

Instrumentation and Control

Design considerations for both regulatory and advanced control strategies, and key instrumentation are discussed.

Emergency Operation

Problems requiring an emergency response and the consequences of a furnace shut-down are covered.

(New) Furnace Troubleshooting and Operating Strategies

Troubleshooting issues, such as excess fuel consumption and short run lengths, will be discussed. Operating strategies discussed will include turndown, run-length scheduling, and run-length optimization.

Who Should Attend?

The course is targeted to plant process engineers who are responsible for the operation and efficiency of ethylene cracking furnaces.

The course provides a knowledge base for the novice engineer while offering a good review and new insights for the experienced engineer.

Yes ! I would like to register the following participants

Name 1
Job Title
Session Title
Name 2
Job Title
Session Title
Company Information	
Company.....	Authorized Signatory
Address	(*This registration is invalid without signature from an authorized officer)
Town	Name
State.....	Job Title
Tel	Tel
Fax	Fax
	Signature.....

Course Fee

The cost per person is US \$3,500. Invoices are issued upon receipt of registration and must be paid prior to the start of the course.

Registration must be received by May 1, 2011. Refunds cannot be made for cancellations after May 15, 2011.

**Course may be cancelled if a sufficient number of registrations are not received by May 1.

General Information

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