

PROCESS FIRED HEATERS COURSE**Training Date:** 13th – 17th May 2012**Training Venue:** Best Western Doha Seef Hotel, Qatar**Training Time:** 0730 – 1430 hours**Training Fee:** USD3,500.00 per participant**INTRODUCTION**

Fired Process Heaters This course will provide an insight into the basics of thermal, mechanical design of furnaces, and also the safe and efficient, operation of this equipment. Emphasis will be on common, design methods, consideration of fuel type, combustion chemistry and heat release, combustion air supply and control, and mechanical factors will include; burners, refractory, tube design, and corrosion and fouling mitigation. Techniques to improve efficiency operate safely and meet emission guidelines will be reviewed during training session.

WHO SHOULD ATTEND?

The course is intended for professionals working with fired process heaters in the petroleum, petrochemical, chemical and allied industries and would be especially valuable to process designers, process engineers, maintenance personnel, and those involved in design, retrofitting and specification of the fired heaters.

COURSE OUTCOMES

At the end of the Training, the delegates will be able to:

- Identify and list the applicable codes and standards for fired process heaters.
- Determine the mechanical limitations of heaters.
- Describe the theoretical and practical aspects of burners and combustion air supply, common and complex instrumentation applications, heater operation, tube and refractory design.
- Explain key operating parameters.
- Employ techniques to minimize emissions, corrosion and fouling.
- Implement safe practices.
- Identify safety issues.
- Identify typical problems and identify possible causes.
- Identify the key inspection and turnaround items.

COURSE OUTLINE**Introduction to Fired Heaters**

- Applications
- Descriptions
- Factors governing choice of design
- Applicable codes and standards

Combustion Calculations and Sampling**Radiant, Convection Zones Thermal Design and Combining for Total Thermal Design****Burners**

- Types,
- Components
- Flame stabilizing and shaping
- Applications
- Air supply and control
- Identifying need for burner change or revision
- How to implement revisions.

Fuel Considerations

- Fuel types
- Impact on burner and heater design
- Emission considerations
- Retrofit considerations
- Fuel supply systems
- Safety

Combustion Air Supply and Control

- Natural draft considerations
- Mechanical draft considerations
- Dampers,
- Impact of change of service
- Stack design;
 - Draft
 - Static wind load
 - Dynamic load
 - Emissions impacts

COURSE OUTLINE... CONT'D

Instruments and Safety Devices

- Fuel and process flow controls
- Temperature controls
- Draft measurement
- Flue gas analysis
- Safety instrumentation

Improving Efficiency

- Maintenance
- Burner modifications
- Improved controls, additional, convection surface, and air preheat

Design of Tubes

- Available stress data
- Creep and elastic design
- Determination of tube metal temperature
- Selection of tube material and wall thickness
- Selection of tube size

Heater Operation, Testing and Tune-up

- Start up and troubleshooting
- Routine checks
- Efficiency testing
- Other important test data
- Improving operating efficiency

Control of Emissions

- Types control of emissions
- Available control techniques
- Impact of fuel type
- Selecting a control method

Refractory

- Types of refractory
- Selection
- Installation
- Design to reduce heat loss

Corrosion and Fouling

- fireside (low and high temperature corrosion)
- Fouling
- Designing to mitigate impacts of corrosion and fouling
- Tube side (types of corrosive attack)
- Fouling deposit minimization and removal

Reliability and Availability Aspects Process Troubleshooting Inspection and Turnaround Best Maintenance Practices



MALAYSIA LNG SDN. BHD.



ABOUT THE COURSE INSTRUCTOR

Engr. Maurice Michel Hanna, graduated with Bachelor of Science in Petroleum Refining Engineering from Suez Canal University, Egypt and Master Degree in Petroleum Refining and Petrochemical Industry from Petroleum Institute of Romania, and he is a Certified Saudi Aramco Training Specialist.

He has more than 30 years of extensive field experience oil & gas, petrochemical and other process plants, and mainly in project management, design, selection, specification, installation, maintenance, operation, plant optimization and trouble-shooting of oil, water and gas handling facilities in the oil and gas industry.

Throughout his professional career he have served for several oil & gas companies such as;

- Process Engineer at El-Nasr Petroleum Company, Alexandria, Egypt.
- Senior Technical Instructor at Saudi Aramco, Saudi Arabia.
- Technical Instructor (On-Job-Training) at Saudi Arabian marketing and Refining (SAMARC), Jeddah - Saudi Arabia.
- Process Advisor at Al-Furat Petroleum Company (AFPC), Shell Joint Venture (Subcontractor: IHRDC), Syria.
- Production Trainer (On-Job-Training) at Abu Dhabi Marine Operating Company (ADMA – OPCO, Subcontractor: IHRDC), United Arab of Emirates.
- Commissioning (Process) Engineer at Middle East Oil Refinery (MEDOR, Subcontractor: TECNIP International), Egypt.
- Production Advisor at Al-Furat Petroleum Company (AFPC) Shell Joint Venture (Subcontractor: TriStar Meddle East), Syria.



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Registration Form

Please Send Your Registration to:

Tel:	006.013.2082143	Fax:	006.09.6178443	E-mail	info@cfpets.com
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Course Details

Course Name:	Process Fired Heaters Course	Course Date:	13 – 17 May, 2012
Course Fee:	USD 3,500.00 per participant	Venue:	Doha Seef Hotel, Qatar

Company Information

Organization	
Address	

HR / Training Manager

Invoice to be sent to

Name :		
Tel no.:		
Fax no.:		
E-mail :		

Participant Information

	Participant # 1	Participant # 2	Participant # 3
Full Name :			
Job Title :			
Department :			
Telephone No. :			
Mobile No. :			
Fax No. :			
E-mail Address :			

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