Training Title

ENHANCING EFFICIENCY AND RELIABILITY IN REFINERY PROCESS HEATERS

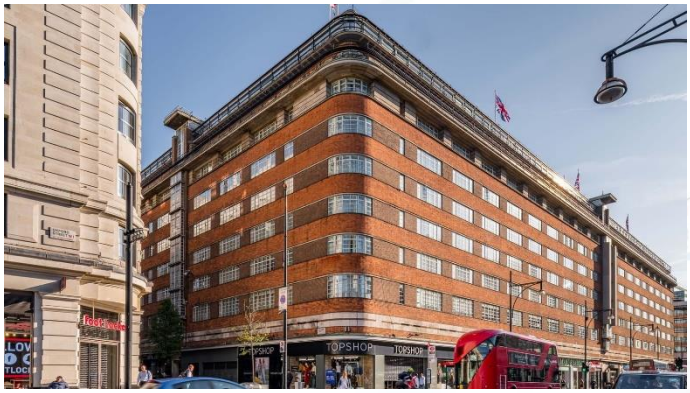
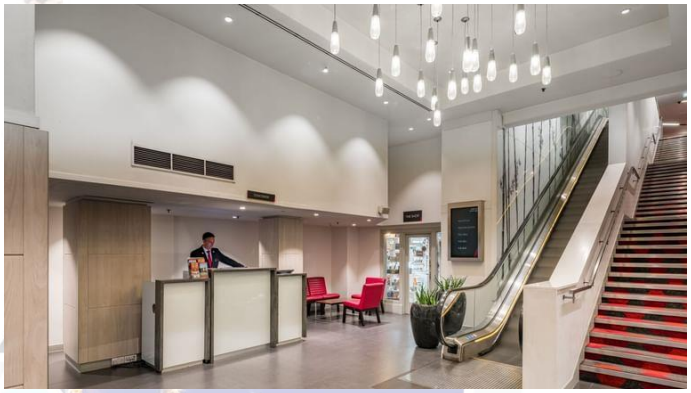
Training Duration

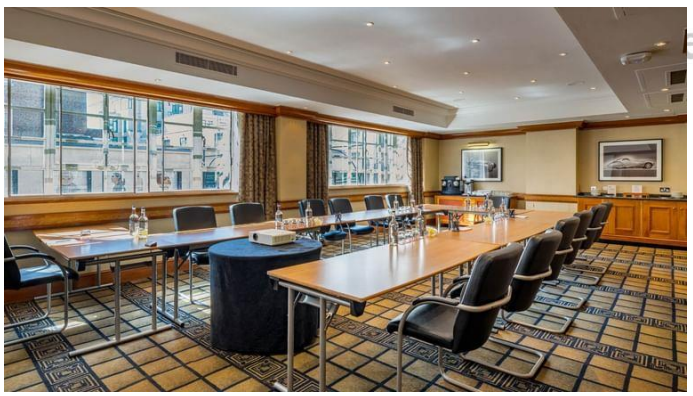
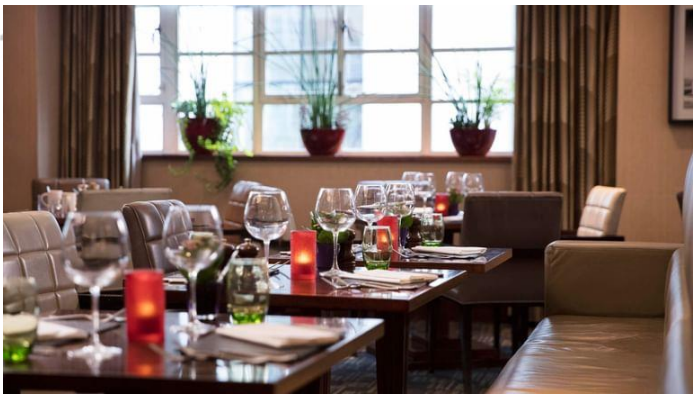
5 days

Training Venue and Dates

PE188	**Enhancing Efficiency and Reliability in Refinery Process Heaters**	**5**	**19-23 February, 2024**	**$6,500**	**London, UK**

Venue:In the 5-star hotel: Thistle Marble Arch Hotel, London,UK.

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Training Fees

$6,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments, and buffet Lunch.

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

TRAINING DESCRIPTION

This training course on Enhancing Efficiency and Reliability in Refinery Process Heaters training course will present an overview of refinery fired process heaters and will discuss most relevant routine inspection and operational evaluation aspects as well as a hands-on methodology for heater continuous assessment and improved efficiency and reliability. Neglected for years, high-energy consuming process heaters have been gradually obtaining increased attention in the Middle East due to higher natural gas prices and the shortage of domestic supply. These facts have prompted an urgent need to accommodate effective measures to increase process heater efficiency into day-to-day refinery operations and in conjunction with it, to reduce greenhouse gas emissions. Refinery engineers and managers are progressively being exposed to combustion and heat transfer issues and their implications to the concepts of energy conservation and equipment reliability. The training course is focused on providing the essential combustion and heat transfer technical background needed to examine and apprehend a variety of practical ideas by which plant personnel involved in process heater performance could improve equipment efficiency and capacity in an economical and environmentally friendly fashion. Example calculations will be interleaved into the training course sessions to gradually unveil a practical methodology for heater evaluation. Working examples illustrating practical means to attain efficiency improvements will also be discussed. This training course will highlight:

- Typical process heater fuels and major polluting emissions
- Process heater types, major components, burners, and service applications
- Routine inspection and operational evaluation methodology
- Heater integrity and troubleshooting
- Practical means to increase heater duty, process flow, and efficiency.

TRAINING OBJECTIVES

Upon the successful completion of this course, participants will be able to: -

- Identify heater main components and functions
- Calculate heater carbon footprint and other pollutants
- Develop a heater monitoring and evaluation methodology
- Optimize daily heater operation and thermal efficiency
- Advise on efficiency improvement projects

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WHO SHOULD ATTEND?

This training course will greatly benefit those professionals who need a thorough understanding of hands-on aspects of process heater operation such as Operations, Reliability and Process engineers.

It will be as well of great value and interest to:

- Process plant supervisors and team leaders
- Process heater maintenance and technical service engineers
- Refinery inspection, materials, environmental and safety engineers
- Experienced operators' applicant to handle heater console operation
- Members of refinery energy optimization groups
- Professionals dealing with risk assessment and integrity analysis.

TRAINING METHODOLOGY:

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. You will also be encouraged to raise your questions and to share in the development of the right answers using your analysis and experiences. Tests of the multiple-choice type will be made available daily to examine the effectiveness of delivering the course.

Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work& Practical Exercises
- 20% Videos& General Discussions

DAILY OUTLINE

DAY 1

Fossil Fuels, Emissions and Combustion Reactions

- Course Overview
- Fossil Fuels
- Emissions and Climate Change
- Combustion Reactions, Stoichiometry and Excess Air

DAY 2

Refinery Process Heaters

- Heater Types and Common Service Applications
- Heater Duty and Heat Flux Rate
- Process Coils and Tube Skin Thermocouples
- Burners
- Refractories

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DAY 3

Proactive Heater Operational Assessment

- Heater Operation Control and Safe Practices
- Heater Performance Assessment
- Periodic Heater Inspections (Burners, Flame Patterns, Coils, Refractories)
- Draft and Excess Air Continuous Control

DAY 4

Heater Performance Evaluation

- Operational Monitoring Trends and Adjustments
- Energy Balance and Thermal Efficiency
- Reporting and Setting Short Term Operating Targets

DAY 5

Heater Troubleshooting and Efficiency Improvements

- Troubleshooting
- Calculating Fuels Savings and Carbon Footprint
- Upgrading or Revamping Heaters

NOTE:

Pre & Post Tests will be conducted.

Case Studies, Group Exercises, Group Discussions, Last Day Reviews, and assessments will be carried out.

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