



Heat Exchanger Inspection, Maintenance & Operation

Training Program



Introduction:

This course presents an overview of the inspection, Maintenance and operation of heat exchangers, with emphasis on gas plant process operations. The overall process flow sheets will be used to illustrate how the various type of exchangers are integrated to the many types of the plants that process natural gas. The advantages, limitations, and range of applicability of each type of exchanger will be discussed so that its selection and integration into the overall plant is fully understood appreciated. The maintenance and operation of these exchangers will also be discussed.

Who Should Attend?

Mechanical Engineers, General Supervisors, Consulting Engineers, Design Engineers, Foremen, Supervisors, Technicians, Maintenance Personnel, Engineers of all disciplines, Supervisors, Team Leaders and Professionals in Maintenance, Engineering and Production Managers, Maintenance Personnel, Heads of Maintenance and Operation, Chemical Engineers, Equipment Specialists, Technical Engineers, Operation Engineers, Planning Engineers, Process Engineers, Reliability Specialists, Boiler Plant Construction Managers, Consulting Engineers, Design Engineers, Insurance Company Inspectors, Operation, Maintenance, Inspection and Repair Managers, Supervisors and Engineers, Plant Engineers, Senior Boiler Plant Operators, Repairers and Installers, Project Engineers and Technologists, Facility Engineers,

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Consultants, Mechanical Engineers and Technologists, Maintenance and Operation Personnel, Plant/Facility Engineers, Technicians, Maintainers, Operators, Chemical Engineers & Technologists, Process Engineers & Technologists, Project Engineers & Technologists, Technicians & Supervisors

Course Objectives:

By the end of this course, delegates will be able to:

- Have an overview of the inspection, maintenance and operations of heat exchangers used in the gas processing industry
- Understand the factors affecting the performance and operation of these exchangers
- Learn the basic vocabulary unique to the industry

Course Outline:

Fundamentals of Heat Transfer

- Mechanisms
- Conduction
- Convection
- Radiation
- Temperature
- Counter flow: double pipe exchangers
- Indirect heaters
- Fire tube / bath
- Bath / coil

Case Studies

Shell & Tube Exchangers

- Effective temperature difference
- Overall heat transfer co-efficient
- Performance evaluation
- Components
- Operating characteristics
- Gas / condensate
- Gas chillers
- Case studies
- Refrigerant / condensate cooler
- Refrigerant sub-cooler
- Reboilers and vaporizers
- Kettle
- Thermo siphon
- Pump around
- Operating Characteristics
- Condensers
- Partial
- Total
- Pressure drop
- Vibration
- TEMA

Hair Pin Heat Exchangers

Tank Heaters

Plate Fin Exchangers Plate Frame Exchangers

Printed Circuit Exchangers

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