GAS & STEAM TURBINES TECHNOLOGY

CONTACT US ON:

T: +971 7 2042072 | Email: training@maestrouae.net

Website: www.maestrouae.net

TRAINING TITLE

GAS & STEAM TURBINES TECHNOLOGY

VENUE

Dubai, UAE

DURATION

5 Days

DATES

29 May - 02 June 2022

PRICE

US$4,000 per attendee including training material/handouts, morning/afternoon coffee breaks and Lunch buffet.

TRAINING INTRODUCTION

The gas Turbine is a power plant that has found increasing service in past 40 years as a power generation plant and as a mechanical drives for other turbomachinery like pumps and compressors. Its compactness, low weight, and multiple fuel application make it a natural power plant for offshore platforms. The last 20 years has seen a large growth in Gas Turbine Technology, new coatings and new cooling schemes. This with the conjunction of increase in compressor pressure ratio has increased the gas turbine thermal efficiency from about 15% to over 45%.

The utilization of gas turbine exhausts gases, for steam generation or for heating applications, advances the gas turbine application and increases the combined cycle power plant efficiency up to 60%, making it as the obvious choice in comparison with other power plant options.

Pushing the gas turbine power plant to the limits, high compression ratio, and high firing temperature make it more susceptible to failures and required a very effective monitoring system plus a very effective and complicated control and protection systems.

Understanding the performance characteristics, steady and transient operation of GT is a must to achieve more availability and reliability of the plant. It requires deeper knowledge and understanding of the function of different components of the gas turbine plant, plus the auxiliary systems which responsible for lubrication, seals, and

cooling to enable troubleshooting the GT better and preventing failures of gas turbines.

TRAINING OBJECTIVES

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

1. Describe the different gas turbine cycles and their features
2. Identify the types of gas turbines based on its technology
3. Describe the most important factors affecting the gas turbine performance
4. Identify gas turbine configurations
5. identify major components/assembly and their function
6. differentiate between single-shaft and two-shaft gas turbines
7. describe key parameters affecting gas turbine performance
8. describe basic control and protection systems used in gas turbines
9. perform troubleshooting and suggest solution for common problems in gas turbines
10. list typical maintenance procedures and inspection techniques

TRAINING AUDIENCE

Technicians, senior technicians, engineers and senior staff who are directly and indirectly involved in the operation, inspection and maintenance and they requiring knowledge of gas turbines.

TRAINING OUTLINE

Day 1

Gas Turbine Overview

Gas Turbine Applications

Gas Turbine Cycles

Gas Turbine Power Augmentation Techniques

Gas Turbine Emission Reduction

Gas Turbine Configurations

Gas Turbine Operation Envelope

Day 2

Gas Turbine Mechanical Components

- Axial-Flow Turbo-compressors
- Combustors
- Gas Turbines
- Auxiliary Systems
  - Loop oil System
  - Bearings
  - Seals
  - Fuel Systems

Day 3

Gas Turbine Control Systems

- Normal Operation
- Load and Frequency Fluctuations
- Start-up Sequencing
- Shutdown Sequencing
- Gas Turbine Protection System

Day 4

Gas Turbine Monitoring System

- Instrumentation and Measurements
- Scheduled Inspection
- Borescope Inspection
- Maintenance Strategies

Day 5

Gas Turbine Troubleshooting

Performance Deterioration

High Temperature Effects

Fouling Problems

Fatigue Problem

Vibration Problems

TRAINING CERTIFICATE

MAESTRO CONSULTANTS Certificate of Completion for delegates who attend and complete the training course

METHODOLOGY

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of "real life" issues in their organizations.
The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.