

Course Name: Gas Turbine Operation, Maintenance & Inspection

Code:

DATE:

Course Objective:

Attendance to the Gas Turbine Operations and Maintenance Inspection training course will enable participants to:

- Familiarize the participants with the fundamentals of gas turbines.
- Understand functions and principles of operation of each of the major components and systems of the package.
- Introduce standard operating procedures for the package, and describe basic maintenance, inspection and troubleshooting techniques.
- Understand design parameters, performance, data sheets, alarm and set points, PIDs
- The course explains how turbines works and the different types in common use.
- How to control and operate Turbines efficiently and key troubleshooting techniques and information.
- Operation and maintenance staff to built confidence level in start-up, follow-up, shut down and trouble shooting.
- Gas Turbine Inspection and Overhaul Best Practices
- Maintenance program and inspection procedures to improve trainees' skills in executing activities in safe and right manner.

Program Methodology:

Gas Turbine Operation, Maintenance & Inspection training course will utilize a variety of proven learning techniques to ensure maximum understanding, comprehension and retention of the information presented. This includes lecture with active delegate participation including discussions, real life problems and case studies.

Through an active participation in the group work and class discussions, the delegates will get a lot of opportunity to increase their experience and knowledge of techniques available for equipment troubleshooting.

Kingdom of Saudi Arabia

Building number: 8992 Abu Ali Road .

P: +966133615552

Al Waha district.

P: +966133611134

Unit number: 3 - Jubail: 35514 – 2302

M: +966 505907654

Who Should attend?

Gas Turbine Operations and Maintenance Training will be of most benefit to delegates currently working in the maintenance and operations departments of the power generation industry including Maintenance Engineers, Supervisors, Operators, Plant Engineers, Equipment Professionals and Supervisors. The course will, however also be very beneficial to those involved in the procurement of new and replacement equipment

Course Outline:

Module 1 - Gas Turbine Basics and Introduction

- What's the gas turbine?
- Historic tips on gas turbines invention
- Brayton thermodynamic cycle
- Gas turbine as a continuous ICE
- Advantages and disadvantages of a gas turbine over a diesel engine
- Categories of gas turbines
- Main factors affecting gas turbine performance
- General package description
- Core engine main components
- Engine support systems
- Turbine Ancillary components

Module 2 - Core Engine components

Axial air compressor

- Introduction to compression system
- Compressor definition and function
- Compressors classification
- Axial flow compressor, components & performance
- Stall and bleed valve
- Compressor washing

Air inlet system

- Air filter
- Inlet air conditioning system
- Primary and secondary air

Kingdom of Saudi Arabia

Building number: 8992 Abu Ali Road .

P: +966133615552

Al Waha district.

P: +966133611134

Unit number: 3 - Jubail: 35514 – 2302

M: +966 505907654

Combustion chamber

- Combustion process
- Combustion chamber construction and design
- Combustor arrangements (tubular, can annular & annular)
- Combustor chamber performance
- Combustor components

Module 3 - Other Important Components

Turbine stages and Exhaust

- Gas turbine configuration
- Blades arrangement and design
- High pressure and power turbines
- Turbine nozzles and blades cooling
- Exhaust duct

Engine support systems

- Starting system
- Lube oil system
- Fuel system
- Control and monitoring system

Turbine Ancillary components

- Acoustic enclosure
- Coupling
- Battery Charger
- Gas and flame detectors
- Fire fighting system

Module 4 - Operation and Follow-up

- Pre-start preparation
- Start up procedures
- Steady state operation follow-up
- Performance evaluation
- Shut down types and procedures

Kingdom of Saudi Arabia

Building number: 8992 Abu Ali Road .

P: +966133615552

Al Waha district.

P: +966133611134

Unit number: 3 - Jubail: 35514 – 2302

M: +966 505907654

- Alarms investigation

Troubleshooting

- Simplified troubleshooting flow chart
- Main troubles possible causes

Module 5 - Gas Turbine Inspection and Overhaul

- Maintenance definition and policies
- Preventive maintenance PM program
- Condition monitoring and diagnosis
- Predictive maintenance PdM program (oil analysis, vibration analysis, boroscope inspection)

Course Duration: (5) Day

Venue:

Time: Numbers of hours: Hours

Kingdom of Saudi Arabia

Building number: 8992 Abu Ali Road .

P: +966133615552

Al Waha district.

P: +966133611134

Unit number: 3 - Jubail: 35514 – 2302

M: +966 505907654