In Association with AVT Academy

Course Name: **Gas Turbine maintenance and operation**

Code:

DATE:

Course Objective:

- Principles of operation of gas turbines
- Design of modern gas turbines
- Control and protection system of gas turbines
- Different stages involved in the operation of a gas turbine cycle
- Problems of gas turbines and recommended solutions

At the end of this training participants will learn ;

- Identify different technologies and applications of gas turbines
- Recognize different parameters affecting the performance of a gas turbine
- Identify the requirements and the procedures for safe start up and shutdown of the turbine
- Understand the importance of TMR control system of the reliability of gas turbine
- Understand how to detect and solve the problems of gas turbines

Program Methodology:

Gas Turbine Technology training seminar will be delivered along workshop principles with interactive lecture format and round table discussions for certain topics. Case studies are employed to highlight particular points and appropriate video material used to illustrate particular conditions. It will include interactive worked examples that will allow all participants to use the knowledge they gained to demonstrate their skills in operating, controlling and troubleshooting gas turbine system.

Who Should attend?

- All employees involved in the gas turbines technology design, operation, control and troubleshooting
- Mechanical Engineers
- Operators
- Foremen
- Supervisors
- Control Engineers

Course Outline:

DAY 1

Basics of Gas Turbines

- Introduction to Gas Turbine
- Simple Gas Turbine Cycle
- Heavy Duty Gas Turbine
- Industrial Gas Turbine
- Aero derivative Gas Turbine
- Advanced Gas Turbine
- Pressure Ratio and Firing Temperature

DAY 2

Design of a Gas Turbine

- Single, Spool and Split Shaft Gas Turbines
- Principle of Operation of Axial Compressors
- Design of IGV, Stators and Rotors

- Can, Annular and Can-annular combustors
- Fuel Nozzles
- Principle of Operation of an Axial Turbine
- Impulse and Reaction Turbine Blades
- Techniques of Internal Cooling of the Blades

DAY 3

Auxiliaries, Protection and Control Systems

- Lubrication System
- Gas Fuel System
- Oil Fuel System
- Hydraulic System
- Starting System
- TMR and Simplex Control System
- Critical Redundant Sensors
- Protection System

DAY 4

Performance and Operation of a Gas Turbines

- Operating Parameters
- Factors Affecting the Performance of a Gas Turbine
- Pre- start check out list
- Start Up and Shutdown Procedures
- Synchronizing procedure
- Normal Loading
- Speed Control and Temperature Control
- Trip Oil system

DAY 5

Monitoring System and Troubleshooting

- Vibration Monitoring and Analysis
- Abnormal Conditions of a Gas Turbine
- Axial Compressors Problems
- Combustors Problems
- Axial Turbine Problems

Course Duration: (5) Day

Venue:

Time: Numbers of hours: Hours

Kingdom of Saudi Arabia

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