Training Program:

Introduction to Gas Turbines

Introduction:

The gas turbine is the most versatile item of turbo machinery today. It can be used in several different modes in critical industries such as power generation, oil and gas, process plants, aviation, as well domestic and smaller related industries. A turbine is any kind of spinning device that uses the action of a fluid to produce work. Typical fluids are: air, wind, water, steam and helium. Windmills and hydroelectric dams have used turbine action for decades to turn the core of an electrical generator to produce power for both industrial and residential consumption. Simpler turbines are much older, with the first known appearance dating to the time of ancient Greece.

The use of Gas Turbines in the Power Generation, Petrochemical and Pipeline Industries has increased considerably in the last few years. The development, in particular, of Combined Cycle and Combined Heat and Power applications has accelerated the use of Industrial Gas Turbines.

This course therefore is intended to provide an overview of the main components of a Gas Turbine together with the main systems that drive the Industrial Gas Turbine.

Who Should Attend?

Electrical Engineers, Power Generation Engineers, Power System Protection Engineers, Gas turbine newcomers and more experienced persons who desire an overview of the many available gas turbine technologies, Process Control Engineers & Personnel, Electrical and Instrumentation Technicians & Design Engineers, Maintenance Technicians & Supervisors, Plant Operators & Technicians, Oil & Gas Industry Personnel

Course Objectives:

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

- Have an overview of the main components of a gas turbine together with the main systems that drive the Industrial Gas Turbine
- Be able to understand the components of a gas turbine
- Identify gas turbines and their purpose
- Demonstrate how gas turbines are designed and operated
- Explain the role of gas turbine generators
- Describe inline gas compressors

Course Outline

Course Introduction

Gas Turbine Theory & Principles

- Definition of terms (Heat Rate, Power Output)
- Simple Cycle, Combined Cycle

Gas Turbine Types

- Industrial
- Aero-Derivative

Gas Turbine Cycles

Major Components of a Gas Turbine

- Compressor Overview
- Combustor Types
- Combustor Theory
- Combustor Overview
- Turbine Overview

Major Accessory Components of a Gas Turbine

- Starting Devices
- Gearboxes (Accessory and Load)
- Generators

Gas Turbine Applications

- Generator Drive
- Compressor Drive

Overview of Gas Turbine Piping Schematics

- Reading Piping Schematics and P&ID's

Gas Turbine Piping Schematics

- Lube Oil System
- Hydraulic Oil System
- Starting System
- Fuel Systems

Accreditation:

BTS attendance certificate will be issued to all attendees completing a minimum of 80% of the total course duration.