GLOBAL TRAINING INSTITUTE

Centrifugal Compressors & Steam Turbines: Mastering Operation & Maintenance



GTI - Coordination Office and International Relations (Accredited Programs)

Course Description

The Centrifugal Compressors & Steam Turbines: Mastering Operation & Maintenance training seminar provides an in-depth exploration of gas compression and expansion principles applied in industrial processes. Participants will gain a comprehensive understanding of the various types of rotating machines commonly encountered in plants. The course aims to equip attendees with the knowledge to address the challenges posed by compressors and turbines effectively, enhancing their operational and maintenance strategies.

Who Should Attend

This course is suitable for:

- Engineers, Operators, and Technicians in Maintenance, Engineering, and Production
- Professionals seeking to update their understanding of Maintenance Engineering Technologies
- Individuals responsible for assessing and implementing these technologies within their organizations

Course Objectives

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

- Demonstrate a comprehensive understanding of centrifugal compressors and steam turbines' mechanical design and performance.
- Illustrate alignment techniques and support criteria for both centrifugal compressors and steam turbines.
- Describe thermodynamic parameters, including capacity, power, efficiency, and gas properties relevant to turbocompressors.
- Utilize calculation methods and characteristic curves for selecting centrifugal process compressors.
- Implement proper procedures for the inspection, maintenance, overhaul, and repair of compressor trains.
- Identify the key components of steam turbines, including rotors, bearings, and sealing devices.
- Conduct reliability audits and apply predictive and preventive maintenance techniques effectively.

Course Content

Gas Laws & Compression Theory

- Fundamentals of gas equations and practical compression laws.
- Understanding Mollier diagrams and their applications.

Compressor and Turbine Performance

- Analysis of affinity laws for centrifugal impellers.
- Exploration of characteristic curves and common operational problems.

Steam Turbines Overview

- Characteristics of steam turbines and associated steam conditions.
- Control systems and safety devices for optimal operation.

Turbine Construction & Maintenance

- Examination of turbine construction, bearings, seals, and rotor dynamics.
- Overview of typical mechanical incidents and maintenance strategies.

Engineering Aspects

- Understanding API specifications and essential information required for bidding on turbine and compressor projects.
- Discussing the implications of design on operational efficiency and maintenance considerations.