

Training - Steam Turbines Operation



EXTAV-EN-P



Face-to-face only



5 days

This training provides an appropriate knowledge of steam turbine technology, performance and operation

Level

Skilled

Public

Engineers and technicians in charge of steam turbine operation, maintenance and steam turbine projects

Objectives

Attendees will be able to implement the following skills:

- Explain the operating principle and the basics of steam turbine control
- Recognize the technology and different components of single- and multi-stage turbines
- List the main criteria for selecting a steam turbine

Pedagogical & technical resources

Study of industrial cases:

- Different examples of steam turbines design and on-site layout
- Use of a dynamic simulator to demonstrate typical features

Assessment of achievements

Quiz

Prerequisites

No prerequisites are necessary to follow this course

Responsible

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

STEAM TURBINE PERFORMANCE

1.25 days

Steam properties, inlet and exhaust conditions. Ideal and actual expansion.
Monitoring steam characteristics on the Mollier diagram: expansion, heating, efficiency, etc.
Expansion mechanisms: impulse stage, reaction stage and different types of multistage turbine.
Overall performance. Efficiency, steam consumption related to power supply.
Application: analysis of industrial turbine operation.

TECHNOLOGY

1.5 days

Main types of turbines, new designs.
Technical components: rotor, wheels, casing, bearings and thrust bearings, sealing devices.
Vibrations and critical speeds. Condenser and vacuum devices.
Application: study of different types of turbines and related auxiliary systems.
Practical workshop: study of component parts using a dismantled turbine.

STEAM TURBINE CONTROL SYSTEMS

0.75 day

Speed control systems. Controllers: characteristics of conventional and digital controllers.
Equipment technology: sensors, transmitters, controllers.
Safety devices: overspeed, vibrations, temperature.

OPERATION

1 day

Lubrication and sealing devices.
Important parameters for turbine operation.
Monitoring of steam circuit and lubrication circuit.
Start-up and shutdown sequences of different types of turbines.
Incidents occurring in the steam network, the machine or the ancillary equipment.
Safety and prevention.

DYNAMIC SIMULATION - APPLICATIONS

0.5 day

Preparation and start-up of a steam turbine driving a centrifugal compressor.

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.
Please contact our disabled persons referent to check the accessibility of this training program : referent.handicap@ifptraining.com