

# Training - Steam Turbines



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](mailto:referent.handicap@ifptraining.com)