



## NDT inspections on rotating equipment

Are you a power station operator?? Do you use compressors, turbo pumps and fans? Do you want to commission the inspection of new components before they are installed in your machine? Our years of experience enable us to help you with conventional as well as advanced inspections.

### Your tailor-made solution

Vinçotte is your partner for all activities relating to inspections of turbines and other rotating equipment. Our personnel have received special training in the inspection of turbines (gas as well as steam). All our team leaders have more than ten years of experience in this field. We make use of a combination of conventional and advanced inspections. We can also if necessary, develop an investigation tailor-made to the application (special semi-automatic or automatic UT test, specifically Eddy Current Testing, ACFM [Alternating Current Field Measurement Testing], 3D laser profilometry, etc.).

Photographs may be taken of the shortcomings found, and will be attached to the report that will be drawn up at the end of the investigation. List of the typical inspections carried out by our services:

- MT: magnetoscopic test (fluorescent or through contrasting medium)
- PT: penetrant test (fluorescent or through contrasting medium)
- VT: visual inspection
- UT: ultrasonic test (manual or automated)
- RT: X-ray test

#### Inspection of the rotor:

- - complete VI of the rotor (erosion, corrosion), missing parts, deformations, excessive play between the blade and the disk, etc.
  - 100% MT of all visual surfaces of all the mounted blades (PT for those that cannot be magnetised).
  - UT on the bases of the blades of our special shape.
  - UT on the welds of the rotor shaft.
  - MT on the cover bands and the blade tip links.
  - UT of the rivet connections between the blade tip and the cover band.
  - PT (detection of fatigue-induced corrosion) of the rotor coupling flanges and the neck moulds between the flange and the shaft.
  - UT of the damper lines of the last stages of the LP rotors.
  - MT and UT of the coupling gudgeons of the rotors.

#### Inspection of the stator:

- - full VI (erosion, corrosion, missing parts, deformations, etc.)
  - 100% MT of the visible surfaces of all the blades mounted on the blade carriers (PT for all blades that could not be magnetised).
  - MT on the cover bands of the blades
  - MT on sealing surfaces of the bodies
  - UT on the rivet connections between the blade tips and the cover bands
  - MT and UT on the gudgeons of the bodies (in the mounted or the unmounted position).
  - UT and PT on the white metal of the bearings.
  - MT on the bearing casings
  - MT or UT on critical zones of the bodies

Inspection of the steam pipelines:

- - MT and UT of the welds
  - MT on the sealing surfaces of the flanges.
  - MT on the deflecting vanes in the bends.
  - MT or PT on compensators or bellows.
  - MT and UT on the flange gudgeons (mounted or unmounted).

Inspection of the steam components (control or shutoff valves)

- - PT on all the parts covered with Stellite, or other hardened surfaces.
  - VI of the internal surfaces, valve rods, filters, chambers and other parts.
  - MT and UT on the gudgeons (mounted or unmounted)

This service offers you:

- Advice and exchange of experience with a view to programs for inspection during construction and operation (periodic inspections).
- Inspection of new components.
- Conduct of non-destructive testing and destructive testing programs during the construction and the operation.
- Investigation of problems during operation.

## Your result

In the absence of standards, Vinçotte will develop the inspection programs and NDT techniques in collaboration with the manufacturer and the operator, based on its professional experience.

## Please note

In the absence of standards, Vinçotte will develop the inspection programs and NDT techniques in collaboration

## In which situation?

Operators of core centres and classic centres (steam turbines), gas turbines and CCTG (Combined Cycle Gas Turbines) plants. Smaller groups of a few MW. Also, operators who have other rotating machinery such as compressors, turbo pumps and fans.