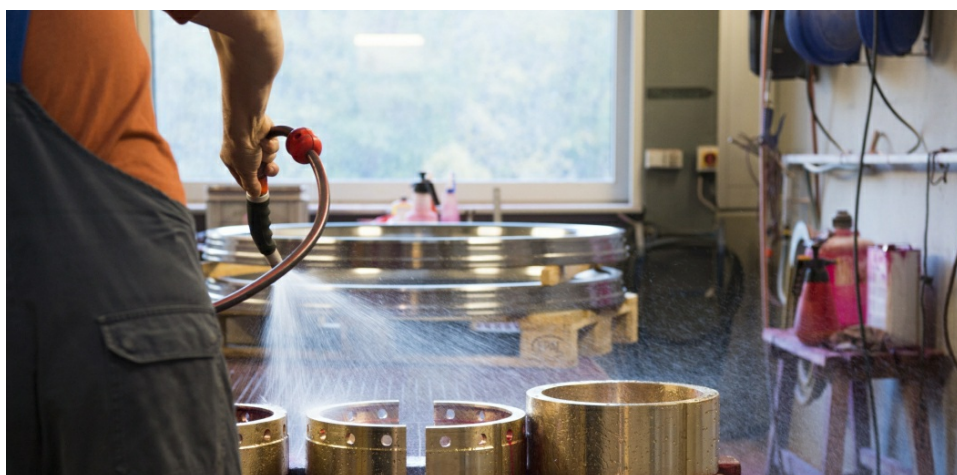


NON-DESTRUCTIVE TESTING (NDT)

Non-destructive testing makes it possible to detect cracks or porosity, bulk defects in a mechanical part, without altering it.



NDT can be carried out during manufacturing, renovation or on-site condition checks carried out at regular intervals. Facility owners can use this to plan the necessary corrective measures for their installations.

This service also makes it possible to verify a welding job or to approve the quality of a raw material before it is machined.

Methodology

There are several types of non-destructive testing. Our certified experts carry these out themselves:

- Visual testing (VT), which can provide essential information on the external condition of a part by detecting obvious defects such as wear, corrosion or open cracks.
- Penetrant testing (PT), which consists of applying a coloured (red) liquid penetrant to the surface, which enters the part's pores. After removing the excess penetrant, a developer is applied to cause the remaining liquid in the pores and cracks to resurface through capillary action. This method reveals defects measuring 1 µm in width, 100 times finer than a strand of hair.
- Magnetic particle testing (MT), which makes detection of superficial or even slightly more underlying defects possible by applying a magnetic developer and magnetising the metal part to saturation. This process only applies to ferromagnetic materials: steels (except austenitic steels), cast iron, nickel, and cobalt.

On request, we can also carry out ultrasonic (UT) or radiographic (RT) testing to detect internal defects.

Client benefits

Non-destructive testing provides a precise analysis of a mechanical part's condition, its state of wear, and its capacity to remain in operation. It makes it possible for hydroelectric facility owners to plan maintenance work on their installations.

ADDITIONAL SERVICES

Servicing of mechanical components

This service deals with the inspection of large diameter safety equipment (butterfly valves, globe valves, bell housings) as well as the examination of large injectors and pumps. Servicing is performed in accordance with the facility's own maintenance plans and the requirements of suppliers.

Renovation of wheels

HYDRO Exploitation provides all the services needed to maintain and repair impellers and turbine wheels (Francis, Pelton, and Kaplan) as well as their constituent components, regardless of size. This work is carried out in our workshops or on site for wheel polishing.

Machine Shop

The HYDRO Exploitation machine shop in Martigny constructs various mechanical parts for mechanical reconditioning or for spare parts. It is also required to supply any necessary parts for refitting during operations.

Welding activities

Hydroelectric production equipment is largely composed of joint welded parts. The entire welding process is a special process requiring a high level of skills and special monitoring from design right through to production.

CONTACT

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