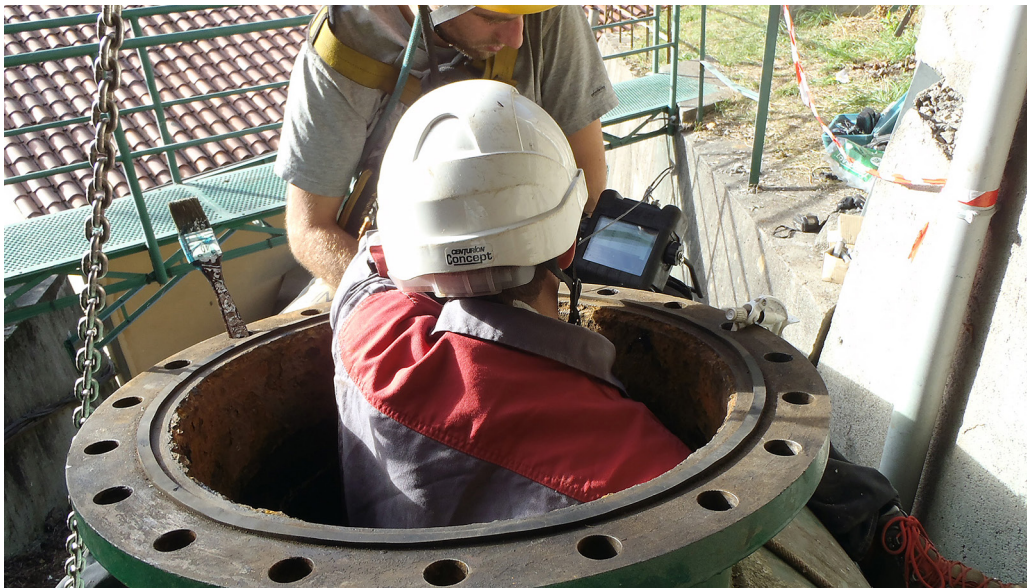


Hydrostadium NDT expertise in hydropower

Three non-destructive testing tools: ACFM, TOFD and phased array had to be used to examine the penstock of the Pas-du-Loup hydropower plant in the “Pyrénées Orientales” county (Eastern Pyreneans) in France.



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OUR CLIENT

Corporate name
Hydrostadium

Activity
Engineering, hydraulic structures and tanks for white water sports

Workforce
90 people

Hydrostadium, a fully-owned subsidiary of EDF, was entrusted with checking the resistance of the Pas-du-Loup hydropower plant in Arles-sur-Tech (France). The plant, which was refurbished in 1960, is supplied with water from an dam by a 120-metre long penstock. After inspecting the civil engineering of the facility, the penstock which connects the dam to the plant had to be inspected. “We naturally called on Cetim because a previous investigation carried out by Cetim’s experts had proven fully satisfactory” stated Yann Fage, civil engineer at Hydrostadium.

Cetim’s experts carried out their investigation during a scheduled shutdown of the plant. They firstly performed a visual inspection inside the penstock. It was quite an acrobatic feat given that the penstock measures 1.3 metres in diameter. Rope access technicians were called in to support them in the very steep sections.

A whole range of skills

The second operation involved measuring from the outside, the residual thickness of the metallic wall and the pipe paint thickness every 6 metres. A conventional ultrasonic testing

method was sufficient for this purpose. However, the phased array ultrasonic technique was preferred on the sections that had been previously identified as being potentially corroded. In fact, by using this technique which is similar to ultrasonography, the steel sheet thickness can be viewed over a surface area of 10 cm x 10 cm. The final operation, the examination of the welds at the area where the penstock branches off into three sections, required the use of three different types of tests (TOFD, ACFM and phased array testing) since the characteristics of the welds performed more than 50 years ago, are no longer documented. In the end, the structure was found to be in good condition.

Cetim’s asset

Cetim experts are proficient in all existing NDT techniques: the most conventional ones (dye penetrant testing, magnetic particle inspections, eddy current flaw, vacuum box testing) as well as the most advanced ones

