

# EDF Dampierre Acoustic emission testing

To check the leaktightness of the cooling water discharge lines of the EDF nuclear plant located in Dampierre, a 1,800-m long pipe was tested by acoustic emission. No leak was detected!



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## OUR CLIENT

### Corporate name

EDF – Nuclear Plant of Dampierre-en-Burly (Loiret-France)

### Activity

Power production (four production units of 900 megawatts each, approximately 24 billion kWh per year, i.e. 5 % of the French production. All EDF plants have ISO 14001 environmental certification)

### Workforce

1 334 employees

In the scope of the nuclear site safety reinforcement policy (further to the Fukushima accident in Japan), the EDF nuclear power production centre (CNPE) in Dampierre-en-Burly (Loiret, France) requested Cetim to check the perfect leaktightness of the discharge line for the effluents generated by the production process.

“This stainless steel pipe (diameter 160mm) discharges cooling system waters, among other effluents, explains Gilles Lhuillier, “Boilerwork section” preparator on the Dampierre site. Thus, the pipe must be inspected on a regular basis in order to check for any leak

into the environment before discharge into the Loire River.” The task was quite complex as the pipe is 1,800 m-long and difficult to access as most of it is buried or covered with heavy concrete labs.

### A probe every 40 metres

Further to EDF’s request, a Cetim team implemented the acoustic emission testing method. “Approximately fifty sensors were installed along the pipe”, says Gilles Lhuillier. The pipe was pressurised to 6 bar and the quality of detection was checked with a simulated micro-leak. Then, Cetim specialists tested the

## Cetim’s asset

Cetim offers a comprehensive range of non-destructive testing services and skills with innovative



methods: acoustic emission testing, infrared thermography, phased-array or TOFD ultrasonic testing, high-frequency or pulsed eddy current testing, etc.

pipe for two hours. No leak was detected, and this was furthermore confirmed by the fact that the pressure remained steady during this period. “Acoustic emission testing is flexible and accurate. This method resulted particularly safe and cost-saving, compared to the cost of a shutdown in case of leak”, concludes Gilles Lhuillier.