



APPLICATION REPORT

Power generation

Optimised electricity production

- Non-contact level measurement of water
- Unique Wave Horn antenna, insensitive to condensation
- Operation made simple



1. Background

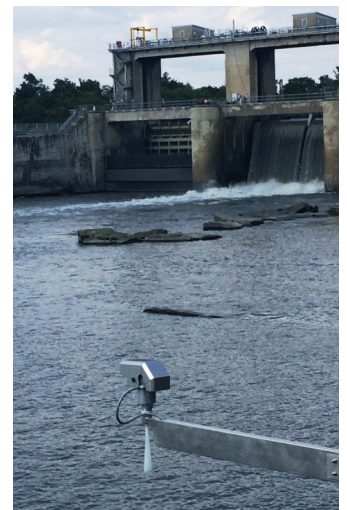
EDF is the main producer and supplier of electricity in France and the world. Electricity from hydropower is part of its production. Built on the Isère in the department of Drôme between 1917 and 1922, the Beaumont-Monteux dam is 134 m / 440 ft long, 11.5 m / 38 ft high and supplies electricity to the Beaumont-Monteux power plant.

It is a so-called "run-of-river" power plant which produces electricity by diverting water from the flowing river and guiding it down a channel which leads to a generating house. The force of the water spins a turbine that drives the generator.

2. Measurement requirements

In order to control the valves that feed the turbines and regulate the electrical production, the operator needs to monitor the river level up- and downstream of the dam. Previously, ultrasonic sensors as well as pear-shaped level switches were used for this purpose but they were prone to build-up and unreliable in difficult weather conditions.

Like most hydroelectric power plants in this region, the one in Beaumont-Monteux is entirely automated and managed remotely by a control centre in Lyon, about 100 km / 62.1 mi away. To optimise the electricity production, Lyon needs continuous, reliable and accurate readings of the river level.



Level transmitter OPTIWAVE 5200

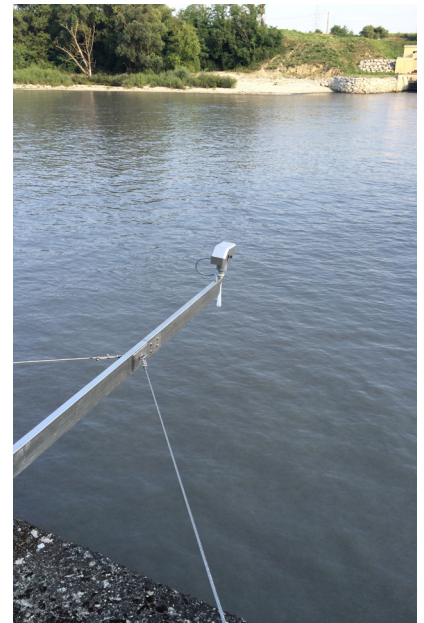
KROHNE

3. KROHNE solution

EDF selected 2 OPTIWAVE 5200 C radar level transmitters with PP (polypropylene) Wave Horn antennas. To monitor the river levels and control the valves, one OPTIWAVE is installed upstream of the dam and the other one downstream.

Installation and operation are simple, safe and secure and a stainless steel shielding protects the converter in extreme weather events. Insensitive to condensation or floating objects on the water surface, these FMCW radars reliably and continuously deliver accurate measuring data where other technologies fail.

The data are retransmitted to the control centre in Lyon, which runs the power plant remotely.



OPTIWAVE 5200 measuring water levels

4. Customer benefits

The OPTIWAVE 5200 C radar level transmitters are easy to install and operate. The FMCW technology and Wave Horn antenna allow for accurate and reliable level measurement, even in case of build-up, floating objects or difficult weather conditions. Virtually maintenance-free and easy to install the OPTIWAVE 5200 can be linked to a PLC (programmable logic controller) or a control centre and operated from a distance for optimised electricity production.

5. Product used

OPTIWAVE 5200

- Radar level transmitter
- Measures the level, distance and volume of liquids, pastes and sludges
- Modular design of housing
- Installation made easy
- HART®, FOUNDATION™ Fieldbus, Modbus



Contact

Would you like further information about these or other applications?
Do you require technical advice for your application?
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