

Water Treatment Facility Meets Environmental Guidelines with Open Channel Flow Measurement

RESULTS

- Accurate level reading communicated digitally
- Low cost installation
- Reading accuracy verified on a regular basis



Reading accuracy is verified on a regular basis, fulfilling environmental requirements

APPLICATION

Open channel flow measurement

CUSTOMER

A UK water treatment works

CHALLENGE

As a result of environmental regulations, the volume of water discharged by water treatment plants must be measured and recorded. This measurement must be in accordance with ISO4359 (BS3680), which takes into account boundary effects due to the surface roughness of flume walls. The overall system accuracy must be better than 8% of the total daily volume, and the instrumentation must be checked on a regular basis.

SOLUTION

A Rosemount 3107 ultrasonic level transmitter and 3493 flow logger were installed, along with a Head Verification Device. The HVD is mounted on a support over the flow.

The 3107 is powered by the 3493 logger which is mounted in a nearby field cabinet. The level reading from the transmitter is used by the logger to calculate the flow in the channel, which is logged at regular intervals together with totalized flow through the channel.

To reduce error, communications between the transmitter and control unit are digital HART, eliminating any transmission error and allowing accurate computation of flow by the 3493 controller.

It is a requirement to check that the installation remains accurate. The HVD target plate can be lowered and rotated around under the transmitter to provide a fixed target at a known height. The target level and flow reading for this simulated level is calculated and compared to theoretical values stamped on a calibration plate alongside the 3493 controller. Inspectors can thus visit the site and check the installation easily and quickly.



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