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Application note

Leak detection on water distribution network using clamp-on flowmeters

Benefits

- Easy to set up
- No mechanical modification
- No downtime
- Acceptable accuracy and repeatability

Summary

A global engineering company in the testing, inspection and certification field in the UAE was awarded a project from a local water distribution company to track leaks in their main water distribution networks at Al-Selmiyyah, Bainoona and Yas Island sites in Abu Dhabi.

The inspection company traditionally used methods like 'acoustics technology' to identify leaks. However, they recognized that this approach was time consuming and expensive, and so began to explore alternative solutions, such as ultrasonic flow meters.

Application

Water lines – flow measurement on ductile iron pipelines ranging from DN400 to DN600 (16" to 24"), simultaneously at the inlet and outlet in each identified segment to verify the line balance.

Challenge

The customer advised that the water flow could not be interrupted, and therefore required a non-interruptive and possibly a non-intrusive method. As a result, the customer, partnering with Panametrics' Channel Partner, explored liquid clamp-on ultrasonic flow meters.

By measuring the totalized flow simultaneously at the two ends of the pipeline segment, they could compare the readings and assess whether any major leaks appear in between. Any imbalance in the flow readings, would indicate a leakage in the pipe.

Upon confirming the presence of a leak, the contractor could use different methods such as 'Acoustic Leak Detection' to locate the leak on the underground pipe network.

The customer was impressed by the proposed solution but required sufficient confidence that any flow measurement technology deployed was robust, reliable, accurate and easy to install (no mechanical modification to the pipe was possible as there are hundreds of branch connections across the customer's water network).

Eager to road-test the proposed solution, the customer approached a range of clamp-on vendors, including Panametrics.

Solution

A product demo was conducted by Panametrics' local Channel Partner at two different locations using PT900 and AT600 Clamp-on Ultrasonic flow meter technologies. The results provided a 100% flow reading match demonstrating the accuracy of Panametrics products.

After seeing the successful demo, the customer ordered two Transport PT900 portable meters and is now better equipped to identify leaks, save water and optimize its operations.

1. AT600/PT900
2. CRS402 / CRR592 1MHz transducers
3. Clamping fixture
4. Cable
5. Solid pad couplant CPL-8

Panametrics, a Baker Hughes business, provides solutions in the toughest applications and environments for moisture, oxygen, liquid and gas flow measurement.

Experts in flare management, Panametrics technology also reduces flare emissions and optimizes performance.

With a reach that extends across the globe, Panametrics' critical measurement solutions and flare emissions management are enabling customers to drive efficiency and achieve carbon reduction targets across critical industries including: Oil & Gas; Energy; Healthcare; Water and Wastewater; Chemical Processing; Food & Beverage and many others.

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linkedin.com/company/panametricscompany

Per avere più informazioni
CONTATTACI

EP srl
41124 Modena
Via S. Faustino, 155/P

Tel. +39 059 35 76 00
www.epsas.it
ep.ma@epsas.it

Baker Hughes

Panametrics.com

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