Panametrics
a Baker Hughes business

Application note

Flow monitoring at Sea Water Reverse Osmosis plant improves water distribution

Benefits:

- Easy to set up
- No mechanical modification
- Superior technology
- No process interruption
- No downtime and acceptable accuracy / repeatability

PT900 with CRR 591 0.5 Mhz transducers on DN1200 GRP pipe (48")

Summary

One of the largest Sea Water Reverse Osmosis (SWRO) desalination plants in the MEATI region approached a Panametrics Channel Partner to verify its existing magnetic flowmeters. Due to periodic calibration requirements of the magnetic flow measurement technology, the customer's Maintenance Team was looking for a practical verification methodology for permanent and/or temporary (portable) solutions on large pipes.

The pipe material was HDPE (high-density polyethylene pipe) and GRP (Glass reinforced Plastic) and the pipe sizes varied from 800mm to 1600mm (32" to 64").

Application

Measurements were required at the water pipeline's outlet from the SWRO plant feeding the distribution side. The flow was measured on plastic pipes of various sizes, next to the magnetic flowmeter locations for a water balance calculation.

Pipe Size:	DN1200 (48")
Material:	GRP (Glass reinforced Plastic)
Wall thickness:	7 mm
Straight Runs:	20D / 15D upstream and downstream

AT6-AT-10 transducers (1Mhz) on DN600 (24") HDPE pipe

AT600 local display reading

Challenge

The customer required an accurate and repeatable flow measurement solution that was easy to install and would not halt operations. Mechanical modification was not an option for verification of the existing inline flowmeters on the water network.

The customer trialed a number of clamp-on ultrasonic flow meter options. To demonstrate the effectiveness of Panametrics' technology, the Channel Partner trialed a dual traverse installation on the GRP 1200 mm pipeline with two transducers on the same side of the pipe. The customer found the Panametrics option provided quick, accurate and reliable results compared to competitors.

1. AT600/PT900
2. CRS401 0.5Mhz / CRR592 1MHz Transducers
3. Clamping fixture
4. Cable
5. Solid Pad Couplant CPL-8

Solution

The successful product demonstration used the Transport PT900 and Aquatrans AT600 ultrasonic clamp-on flow meter solutions. This achieved a 1% to 2% match between the existing magnetic flowmeters and the Panametrics' clamp on ones, verifying their performance.

After seeing the successful demo, the customer placed an order and now has a flow meter solution, with 1Mhz and 0.5Mhz transducers, installed permanently on the main outlet line from the SWRO, and another portable flowmeter to run periodic checks for the permanent magnetic flowmeters.

As a result of Panametrics' solution, the customer now has a dual traverse installation, despite large pipe sizes and challenging pipe material. The accuracy and reliability of the flow meters is enabling the customer to monitor its process efficiency, perform an accurate Balance of Plant, plus benefit from improved efficiency and productivity.

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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