

High-tech
Products

New Water Meter Thrives in Harsh Environment



The new SmartMeter™

The Nevada desert: grit, dust, blazing hot sun by day and ground frosts by night. Just the place to stake out a water meter in an open pit and see how long it can last. That's what happened to Severn Trent Services' new SmartMeter™ — with some revealing results.

Dr. Neil Furnidge, engineering director at Severn Trent Services' Metering Services group, was the liaison manager for the Nevada desert evaluation. He explains the reasoning behind it: "Water companies aim to keep losses caused by meter failure to an absolute minimum." Since this meter was designed to offer water companies maximum accuracy and durability, Dr. Furnidge wanted a way to demonstrate those qualities to customers by using it in an extremely challenging environment.

So when a major water company whose territory includes the Nevada desert decided to evaluate the SmartMeter, it was just the opportunity the company wanted. Three meters, picked at random from the production line, were supplied for the trial.

Environmental conditions for the evaluation could not have been more arduous. Temperatures in the Nevada desert range from 100° during the day, down to near freezing at night. The pit into which the meters were installed was exposed to the blazing sun. However, when rain did fall, the

pit quickly flooded, causing the meters to become submerged. "We were told that, under these conditions, most conventional meters fail within a month," comments Dr. Furnidge.

The SmartMeter uses an advanced microprocessor and a solid-state fluidic oscillator to deliver accurate readings for the life of the meter. And it has no moving parts to wear out.

Meters undergoing this rigorous evaluation are first assessed on the water company's test rigs for accuracy against the American Water Works Association (AWWA) C-700 Standard. If successful, the meters are installed in the pit and set to maximum continuous flow for the ultimate evaluation of reliability.

At the end of the first month, the SmartMeters remained unaffected and the evaluation was extended — first by one month and finally by three months, and still no failures. The water company eventually called a halt to the test when, after six months in the pit, the meters still were operating as they had on the first day of the test.

"When the meters were removed they had each registered 4.5 million gallons," says Dr. Furnidge. "Whereas, the previous 'best' for any other meter at the site was 1 million gallons." After the evaluation, the meters were once again assessed for accuracy on the water company's test rig, which revealed that the meters were still in perfect working order and fully complied with AWWA accuracy requirements.

Finally, the SmartMeters were returned to Severn Trent Services where they were installed on STS's own test rig and found to still be within the design tolerances for new units straight off the production line. In fact, the meters were examined by Severn Trent Services' engineers. The result? "We could find no degradation in performance whatsoever," said Dr. Furnidge.

For further information, contact Severn Trent Services at 866-646-9201 or write in 1133 on this issue's Reader Service Card.