



Application note

Panametrics' technology proves key in supporting Serbia's successful flood prevention strategy

Benefits:

- No pipe modification
- No process interruption
- Reliable measurement
- Good enough accuracy under challenging straight run conditions



Summary

Serbia has been impacted several times in recent years with severe flooding.

In order to prevent flooding damage to some local communities, a project was initiated by a water management company. The strategy involved diverting the water from a nearby river through a 'flood prevention channel' using a lake as a temporary buffer/auxiliary relief when required.

The flood prevention channel is used to capture the excess water from the river to avoid flooding.

Critical to the success of the operation was the reliability of the pumps. To ensure the safety of the operation and ensure the flood prevention channel itself did not overflow, the customer required an accurate and reliable means of checking the actual volumetric flow of the pumps against their nominal height value, ie: centrifugal pump curve which is the head (or pressure) from the pump discharge versus its volumetric flow rate.

At the same time the customer also had to monitor the water transfer to properly control the overall water balance.

The water management company was therefore in the market for ultrasonic flow meter technology and turned to Panametrics for assistance.

Application

Medium:	rain/surface water
Pipe size and material:	DN800 (32") Carbon Steel
Flow rate:	2000-5000 l/s (31700-79250 GPM)
Temperature:	12°C (54°F)
Requested accuracy:	<±5% of reading

Challenges

The open channel had three submersible pumps placed in an intermediate station where the measurement had to be performed.

The space available to install the flow meter was very tight due to the lack of straight run, so the customer had to make a trade-off between the possible measurement technologies options and achievable accuracy.

On one side there was a 90° elbow and on the other side a gate valve with very little spacing between them (around 500mm (20") of straight run), equivalent to less than 1D.

Normally 10D upstream/5D downstream of the measurement point is recommended.

Pipe modification was not an option.

Solution

Single Traverse 3xAT600.

Despite the challenging conditions of less than 1D available straight length, Panametrics' clamp-on ultrasonic AT600™ flowmeter was able to determine the pump curves with a deviation of less than 5% compared to the pump's theoretical curve.

Three AT600s are now permanently installed for live monitoring of the water transferred between the river/channel/lake. The customer is benefiting from an accurate and reliable solution, despite the harsh environment, helping to prevent flooding in Serbia.

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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