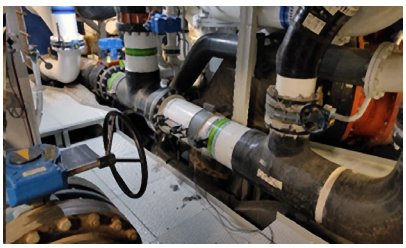
Application note

Panametrics technology helps keep the engines running on dredging ship

Benefits

- Portable measurement
- Installation from outside the pipe without process interruption
- Excellent connectivity
- Ability to work under the most demanding conditions
- Reliability



Summary

A dredging vessel operator was looking for a portable flow measurement device to monitor the cooling water used to keep the diesel engines running at optimal temperatures. The water feeds a cooling circuit that can divest the flow to three different coolers.

The customer tried a number of clamp-on options, but found they were all unable to deliver a reading. So, the team subsequently approached Panametrics, where working in partnership, a solution was found for this challenging application.

Application

Medium:	Seawater
Pipe size:	DN700 (15mm thick, ½") 28" and DN400 16" (10mm thick 0.39")
Pipe material:	GRE (Glass Reinforced Epoxy)
Flow rate:	150 to 1250 m3/h (660 to 5503 GPM)
Temperature:	Ambient
Requested accuracy:	<±5% of reading

Challenge

To achieve the best possible efficiency of the diesel engines ensuring the cooling water flow is appropriately distributed across the three coolers is key. Not fulfilling this requirement leads to increased maintenance costs due to premature bearings wear.

The previous clamp-on measurements installed for this application had failed due to a combination of factors, such as a GRE pipe, with a high rugosity outer profile (no possibility of sanding it) as well as a very compact installation with almost no straight run available vs. the required 10xD upstream and 5xD downstream.

Bluetooth signal transmission was a challenge, and poor connectivity required two persons for the startup of the meter (at the meter and from the control room) and to double-check the actual readings of the unit.

Solution

A Panametrics Transport PT900 clamp-on ultrasonic flowmeter demonstration was offered. The installation and start-up went smoothly and the flowmeter operated flawlessly.

The Panametrics team proved that the powerful ultrasonic signal could perform despite the difficult environment and the pipe material. The flow measurements exhibited consistent and stable readings with good repeatability, despite the short available straight length, and matched the customer's expectations.

The Bluetooth connectivity meant only one person was required for the full start-up process, even with the Transport PT900 tablet situated around 40 meters from the transmitter with a lot of obstacles in-between. There was a strong signal inside and outside the pipe!

The data logging capabilities were also deeply appreciated by the customer and Panametrics technology is now operational on the vessel and helping to keep the engines running at optimal temperatures.

Indeed, one particular member of the customer team, was so impressed with the accuracy and reliability of the PT900 that he purchased two units for his own usage.

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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