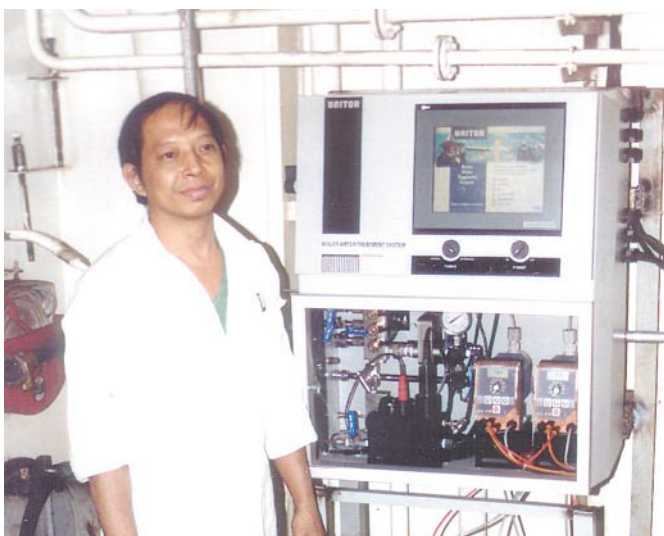


Industry: Transportation

Products Used: FX PLCs /// HMIs

Industrial automation Goes To Sea

Overhauling a ship's boiler can easily cost \$250,000 and take the ship out of service for two or three weeks. Poor water treatment can cause this operation to be scheduled every 4-5 years throughout the ship's life with consequent loss of revenue. To overcome this problem a new automated chemical dosing system for marine boilers has been designed by Kittiwake Developments and their partner Unitor with their new system looking to bring massive operational savings to ship owners and operators.



Probes for pH, dissolved oxygen, electrical conductivity and turbidity are mounted in sample lines fed from the boiler and feedwater systems. Data from these are fed to a Mitsubishi FX2N PLC and run through the PLC's integral 32 bit PID loop control algorithms. If the values change from the set point the dosing level for the appropriate chemical additive is adjusted. The change in dosage rate is related to the error between the probe value and the set point. Working in conjunction with the PLC is a Mitsubishi E910 full colour touch screen HMI.

Application story first released April 2000 by Mitsubishi Electric UK

The HMI's 10.4in IP65 screen is large enough to depict the whole process in an easily appreciated graphical format. It can handle all formulations, schedules and alarms; generate, store and print reports; log trend histories, and is protected by multiple passwords giving tight security for the whole control system.

The graphical screen is a cornerstone element in our system's design," says Iain Lamont of Kittiwake. "Although the internal software is running a complex and critical programme, the HMI makes it so simple to understand that it is intuitive. It is so friendly that ships' officers can operate the system with virtually no training!"

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We were delighted with the technical support that Mitsubishi provided us throughout the whole project

Iain Lamont

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Kittiwake Developments contacted Mitsubishi Electric with a view to designing a completely automated system, aimed at perfect boiler operation and maintenance. Iain Lamont comments, "We were delighted with the technical support that Mitsubishi provided to us throughout the whole project."

Plans are already afoot between Mitsubishi, Kittiwake and Unitor for a further development of the system.