

Wireless improves Barking Power efficiency

Barking Power engineers are reporting improved availability and efficiency at its CCGT (combined cycle gas turbine) plant since installing Emerson's Rosemount 708 wireless acoustic transmitters to identify failed steam traps, leaking valves and boiler tube leaks.

The instrumentation is helping plant engineers at the Thames Power Services-operated power station to avoid substantial costs for lost steam and feedwater, as well as lost revenue from plant downtime.

"Improving process performance is all about understanding what is happening around the plant and being able to respond quickly to any problems," observes Ian MacDonald, senior control systems engineer at Barking Power.

"Emerson's smart wireless technology enables us to introduce additional measurement points quickly and cost effectively at any location, so we can gather additional information to



identify potential faults," he adds.

To improve identification of failed steam traps and problem valves, Barking Power installed 35 of Emerson's wireless transmitters across the plant, explains MacDonald. Should a steam trap fail or a small leak begin, an acoustic device transmits changes in sound and temperature, which are configured to alert operators of a potential problem.

The plant began gaining the benefits immediately, he says, as a leak from a high pressure superheater steam trap

was identified that would have cost £1,400 for every day's lost operation.

MacDonald installed 15 additional transmitters to monitor other problematic areas, including vent valves that can stick during start-up and pressure relief valves that don't seat correctly.

Previous manual monitoring was not only time-consuming, but also failed to indicate when or why a release occurred, increasing the chances of a safety, regulatory or environmental incident.

The new wireless devices enable precise monitoring and alert operators when valves open for a single second.

The acoustic transmitters have also been installed to identify leaking boiler tubes, which not only reduce performance, but also waste large amounts of costly boiler feed water.

Data is fed into the plant's existing Emerson Ovation control system, where noise levels can be trended to identify gradual changes.

HES Tractec takes Molson Coors Brewery up a gear

UK brewery Molson Coors has installed 20 Comer planetary gearboxes, electric motors and variable speed drives to power the rotating floors of four germination vessels in a tower as part of a refurbishment at its maltings site in Burton-upon-Trent.

"There is a monthly servicing programme, as well as condition monitoring for preventive and predictive maintenance, but, with the tower being over 30 years' old, and many of the parts now obsolete, the decision was made to upgrade and modernise," explains engineering manager Steve Holyoake.

Subcontractor HES Tractec recommended the Comer gearboxes, largely for their durability and ability to withstand the extreme conditions of the germination vessels. Molson Coors ordered 16 gearboxes, plus four spares, with motors and VSDs for independent, accurate speed control.

Mounted onto its own frame, each electric motor now powers the rack and pinion mechanism that runs the outer circumference of the floor, with the VSDs also optimising gearbox output, so minimising wear.

"This is all proof of how new technology can improve both the operation and engineering of a plant, as well as giving us the reassurance that, if things go wrong, we can react efficiently, with immediate access to spares," states Holyoake.



Vibration monitors guard hovercrafts' drivetrains

Southampton-based Griffon Hoverwork is buying condition monitoring systems for 12 of its Griffon 8000TD hovercrafts, ordered by the Indian Coast Guard.

The system, designed and supplied by Monitran as a turnkey solution, employs 14 MTN/1100W general-purpose constant-current analysis sensors with ac outputs, sealed to IP68 (submersible) and supplied with marine-approved cables.

Tony Roxburgh, project manager of Griffon Hoverwork, explains that these feed into a bulkhead-mounted waterproof cabinet that contains 14 MTN/8066 g-mac signal conditioning units.

Those, in turn, provide analogue outputs proportional to velocity and peak g, which feed into a PCB-mounted microcontroller, programmed by Monitran to drive a touch-screen display on the front of the cabinet.

"A hovercraft's drivetrain experiences a wide range of loads, in terms of torque and rpm, during operation, as it tends to be worked hard when a crew is responding to an emergency," comments Roxburgh.

"The Indian Coast Guard requested that their 8000TDs be fitted with an integrated engine and gearbox vibration monitoring system to warn the pilot, if the drivetrain experiences any abnormal vibrations."

