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# **MMP** MATERIALS PERFORMANCE

**CORROSION PREVENTION AND CONTROL WORLDWIDE**

**FOCUS ON**

## **CORROSION IN THE REFINING INDUSTRY**

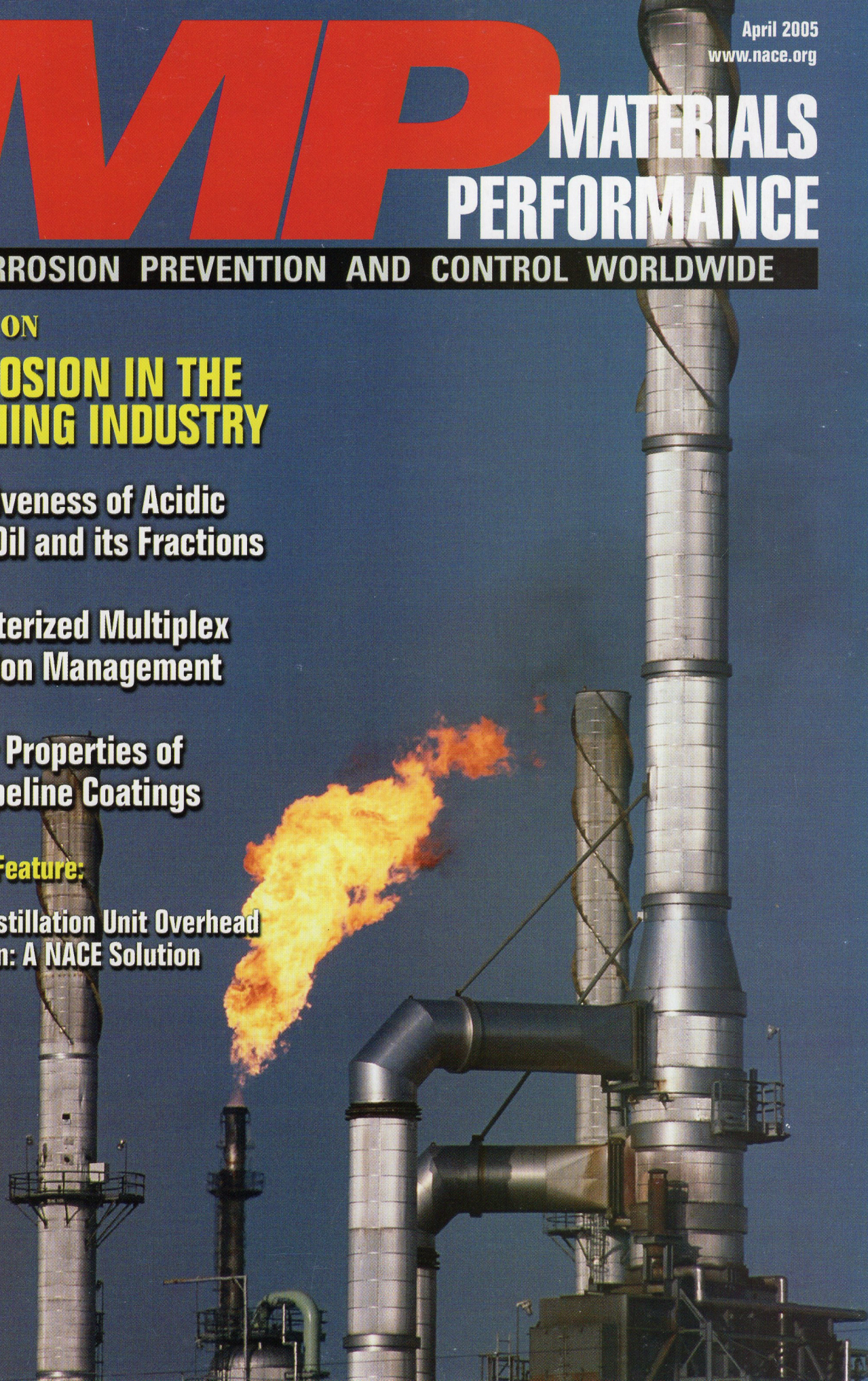
**Corrosiveness of Acidic  
Crude Oil and its Fractions**

**Computerized Multiplex  
Corrosion Management**

**Barrier Properties of  
Two Pipeline Coatings**

**Special Feature:**

**Crude Distillation Unit Overhead  
Corrosion: A NACE Solution**



North Sea and other offshore basins. Using the Tri/SWATH vessel, they reportedly can improve that rate.

“With Tri/SWATH, quicker transit between wells reduces the number of days per job, and moon pools [large deck-level openings through which equipment is lowered into the sea] are optimized for light well intervention,” explains Will Ashby, Commercial Manager of QinetiQ’s oil and gas exploration and production division. “The stability characteristics allow the vessel to

stay on station and get the job done in very rough seas. No other vessel has all these characteristics and can be operated at such competitive rates,” he adds.

OTG and QinetiQ are talking with several companies about potential operators and applications for the first vessel, says Ashby. OTG Interventions

AS, an OTG subsidiary, and QinetiQ expect to finish the design this year and begin operation in mid-2007. Besides the North Sea, QinetiQ officials envision a use for Tri/SWATH in the Gulf of Mexico and offshore in West Africa and Brazil.

In 2000 QinetiQ launched RV *Triton*, a trimaran warship demonstrator with a similar tri-hull design, as part of a trial program sponsored by the U.K. Ministry of Defense and U.S. Department of Defense.

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<sup>†</sup>Trade name.

## Well monitoring system

■ Using flow-based sensor technology, a new oil well monitoring system reportedly detects fluid losses from corrosion-induced pipe failures. The Marginal Expense Oilwell Wireless Surveillance (MEOOWS)<sup>†</sup> monitoring system—developed by Petrolects, LLC (San Luis Obispo, California) and field-tested in Vaquero Energy Co.’s Edison field (Edison, California)—has been designed to improve output for more than 400,000 U.S.

“stripper” oil wells that produce 15 bpd (2,385 L/d) or less.

Comprising a flow sensor, a microcontroller, and a radio to send collected data, the system provides daily, real-time remote monitoring of previously timer-controlled oil wells, says Mason Medizade, President of Petrolects and the technology’s inventor. Operators can install the system by attaching small wireless proprietary flow sensors to a well’s flow-line check valves. The sensors analyze flow data variations and determine oil-flow conditions, he adds.

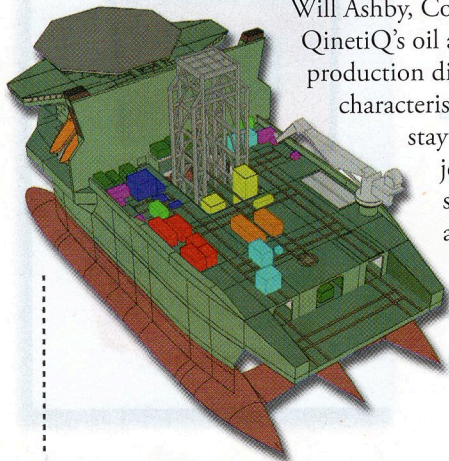
“The rod pumps that go up and down on these wells have no brains,” says Medizade. “The sensor technology gives them a kind of brain power, and when there’s not enough oil flow, the MEOOWS system will shut them off to save on lift energy.” He adds that the system can be used for real-time flow monitoring in a pipeline. “If there’s a leak from the pipe or sudden failure from corrosion and/or other factors, the flow sensor signals will show that we’ve lost fluids or that the flow level has gradually gone down to zero,” he explains.

The system’s main advantages are ease of installation and low cost, Medizade contends. “It improves upon power consumption and maintenance and increases production by checking each second on the rod pump’s status,” he says. “You can turn [the wells] off when they are wasting energy and turn them on when there is enough fluid to be pumped. The system’s surveillance capability also saves field personnel from having to drive hundreds of miles through large oil fields to monitor the wells.”

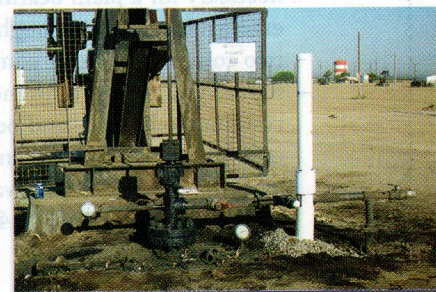
Between 1993 and 2000, businesses abandoned nearly one-third of the stripper oil wells in the U.S., leaving nearly 150 million bbl (24 billion L) of crude oil in the ground, a practice that cost \$3.5 billion in lost output. Medizade and his collaborators hope the new monitoring system will allow operators to avoid production losses that precede well abandonment.

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<sup>†</sup>Trade name.



This three-hull vessel technology includes an abovewater platform designed to make subsea repairs easier in rough seas. Illustration courtesy of QinetiQ.



Developers of the monitoring system attached to this rod-pumped oil well say it can detect pipe leaks caused by corrosion. Photo courtesy of Petrolects, LLC.

—C. Greenwood