

Leaking money

Pneumatic controls that vent natural gas to the atmosphere get an upgrade

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— Henri Tessier, president, CalScan Energy Ltd.

Photos: CalScan Energy Ltd.



CalScan's Bear solar power control systems can be used either in oil installations (above) or in natural gas environments.

The problem with 99 per cent of the control systems used on natural gas separators is that they are run on fuel gas. That means they continually vent natural gas to the atmosphere because they use gas from the well as instrumentation air to drive the various pneumatic instruments and controls.

For more than half a century, this hasn't been much of a problem for the industry. The devices worked. The industry didn't think much of the lost revenue in gas. And if the gas was too sour to vent to the atmosphere, it was content to run them on propane.

Growing pressure to curb greenhouse gas emissions prompted Edmonton-based CalScan Energy Ltd. to develop a new generation of low-power electric control systems for new and existing separators that eliminate the need for fuel gas for all but the catalytic heater. When the company started knocking on doors with the product, it found industry still wasn't all that excited.

“We thought we'd hit them hard on the environmental issue—the methane release into the atmosphere—but we didn't have too much success,” says Henri Tessier, CalScan's president. “They didn't want to spend the money and there's not much government push to regulate this sort of venting.”

Fortunately, CalScan's solar-powered oil level controllers, actuators, chemical pumps and instruments have some other qualities to recommend them: they're durable and they're maintenance-free. And this, it turns out, was of interest to producers, especially in sour and wet gas installations where foaming can cause problems for pneumatic controls.

Selling mainly on the maintenance-free benefit, CalScan today has close to 200 units in the field throughout Alberta.

“We've come a long way,” Tessier says. “We're running pretty complex separator packages that have inlet control, outlet control, three-phase level controls on pumps and we can ensure we don't have any issues even when it's -40°C.”

CalScan Energy can afford to take the long haul in developing its electric controls business since it's a sister company to Cal-Scan Services Ltd., which specializes in the design and manufacture of downhole and surface oilfield recorders and other services. As a growing sideline business, it's now winning clients with new installations as well as retrofits, although much of it still targets wet, sour and problem gas applications.

“A lot of pneumatic instruments need a continual 20–30 psi to run, and with some wells, you don't have that pressure to run the instrumentation,” Tessier says.

Methane missions from pneumatic devices have been a dirty little oversight for decades. Cal-Scan estimates the cumulative venting annually in Canada alone accounts for about 17 billion cubic feet, or almost 6.3 million tonnes in greenhouse gas emissions. The gas revenue lost to pneumatic instruments totals approximately \$100 million which, on a skid basis, is about \$10,000 per year.

“Our system costs an extra \$5,000–\$10,000 max,” Tessier says. “The payback, even at these currently low gas prices, is two to three years.”

Pneumatics have been used in the oilpatch since the 1950s, Tessier adds. Like natural gas flaring or analogue communications, he's betting the industry is ready to accept a 21st-century solution.