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NEW REALITIES BRING NEW MEASUREMENTS

A great deal of activity is occurring in today's flowmeter market. There is a broad trend towards new-technology flowmeters such as ultrasonic and Coriolis, and away from traditional technology flowmeters such as turbine and positive displacement. A number of companies are broadening their product lines, either by choosing to resell other companies' products or through organic development, and there has been quite a lot of merger and acquisition activity in the past several years.

Increases in the price of crude oil and natural gas have brought a substantial increase in oil and gas exploration and production. Oil and gas flow is measured at many points along the way from wellhead to refinery, and once refined products leave the refinery, they are measured at transfer points along the way until it reaches its final destination. As oil and gas increase in value, companies are willing to pay more to measure it, and accuracy in measurement becomes more important.

While oil at $120 per barrel has brought increased demand for flow measurement, this is not the only trend causing change in today's instrumentation marketplace. Here are several other trends that are influencing the flowmeter markets.

Industry Approvals Becoming More Influential

Industry approvals are increasingly important for custody transfer applications. In the United States, two associations that publish standards for custody transfer are the American Gas Association (AGA) and the American Petroleum Institute (API). In 1998, the AGA published a standard for the use of multipath ultrasonic flowmeters in custody transfer applications. This report, called AGA-9, was a major factor in the rapid growth of the ultrasonic flowmeter market over the past ten years.

The groundwork for AGA-9 was laid in Europe by an organization called Groupe Europeen de Recherches Gazieres (GERG). In the mid-1990s, GERG published a monograph that, like AGA-9, specified criteria for the use of ultrasonic flowmeters to measure natural gas flow. This report led to a substantial increase in the use of ultrasonic flowmeters in Europe in the mid to late 1990s.

It isn't only gas flow that is affected by industry approvals. The API has published one standard and two draft standards concerning the use of Coriolis flowmeters for measuring the flow of liquid hydrocarbons. This has helped Coriolis flowmeters penetrate the oil and gas and refining industries. The API has also published a standard governing the use of ultrasonic flowmeters for liquid hydrocarbons.

Vortex flowmeters are also benefiting from industry approvals. For many years, vortex meters had no industry approvals but in January 2007, the API published a draft standard governing the use of vortex flowmeters for custody transfer applications. The standard includes liquid, steam, and gas flow measurement. It was the culmination of a year-long cooperative effort by suppliers and end users to create a standard that would facilitate the use of vortex flowmeters in the petroleum industry.

Many Suppliers Adding New-Technology Flowmeters to Their Product Lines

One way to look at the flowmeter market is to distinguish between new-technology and traditional technology flowmeters. New-technology flowmeters were introduced after 1950, and are more the subject of product development than traditional technology meters. The three fastest growing new-technology flowmeters are ultrasonic, Coriolis and vortex. Traditional technology flowmeters have been around much longer, and in many cases have moving parts. Examples of traditional technology meters are differential pressure (DP), positive displacement and turbine flowmeters.

Globalization has had a major impact on the flowmeter

business. Small companies that used to mainly sell in their own country are finding now that they face global competition, not just competition from other local suppliers. End use and engineering companies are looking for companies that supply more than one technology so they can limit their number of suppliers and order more products from fewer companies.

As a result, many flowmeter companies are adding to their product lines, and they usually add new-technology flowmeters rather than traditional technology flowmeters.

There are many examples of companies adding to their product lines. Sierra Instruments, long known for its mass flow controllers and thermal flowmeters, has added ultrasonic flowmeters to its line. Fluid Components Int'l has added Coriolis flowmeters to augment its thermal flowmeters.

Racine Federated has purchased the industrial vortex flowmeter line from J-Tec Associates and also acquired Asahi America's vortex flowmeters. Aalborg has supplemented its line of mass flow controllers with a line of vortex meters from Venture Measurement. GE Sensing introduced a new line of multivariable vortex flowmeters in October 2007 to augment its ultrasonic flowmeters.

One of the most interesting alliances announced recently (in August 2007) is the alliance between KROHNE and Honeywell. Honeywell is reselling KROHNE's line of flowmeters, which include magnetic, Coriolis, ultrasonic, and vortex flowmeters. KROHNE is also one of the leading suppliers of variable area flowmeters. Blue-White, a supplier of variable area flowmeters, brought out a new line of clamp-on ultrasonic flowmeters early in 2008.

Acquisitions are Changing the Face of the Flowmeter Market

In addition to companies adding flowmeters, there have been a number of outright purchases of companies for the purpose of becoming more competitive and/or to add to a company's product line. GE Sensing purchased Panametrics and its ultrasonic flowmeters in July 2002. More recently, in January 2008, GE Sensing announced the acquisition of Rheonik, a German-based supplier of Coriolis flowmeters. KROHNE has expanded its instrumentation product line by purchasing INOR Process AB, a Swedish supplier of temperature transmitters. This acquisition was announced in January 2006.

In January 2008, IDEX acquired ADS Environmental Services, a supplier of multiple types of water and sewer services. Included in the purchase was Accusonic, a Massachusetts-based company that sells

ultrasonic flowmeters into the water and wastewater and power industries. IDEX also acquired Faure Herman in January 2007. Faure Herman is a French manufacturer of an 18-path ultrasonic flowmeter for liquid petroleum applications, and is also a manufacturer of turbine flowmeters. In January 2008, Emerson sold off Brooks Instrument to American Industrial Partners, a private equity firm based in New York. Brooks is a supplier of mass flow controllers, QUANTIM Coriolis flowmeters and variable area meters.

Another well-known acquisition is the purchase of Controlotron by Siemens in May 2006. Controlotron has been renamed and is now a division of Siemens. Another important acquisition was the purchase in January 2006 of Caldon by Cameron Measurement Systems. Caldon is a supplier of ultrasonic flowmeters to the nuclear industry. Cameron had previously entered the flowmeter business in 2005 with the purchase of Houston-based NuFlo Technologies.

The competition for ultrasonic and Coriolis products and technologies is intense because these are the two fastest-growing technologies. Both Coriolis and ultrasonic flowmeters are highly accurate and reliable, and both are widely used in the energy industries. Look for additional new product introductions in both technologies, including both liquid and gas flow measurement. Coriolis and ultrasonic flowmeters are also beginning to be used for steam flow measurement.

A Look Ahead

The worldwide flowmeter market, including all types of flowmeters, grew from $3.3 billion in 2002 to $4.5 billion in 2007. Much of this increase came from growth in new-technology flowmeters, especially Coriolis, ultrasonic, and magnetic flowmeters. In 2002, revenues from new-technology flowmeters represented 45 percent of total worldwide flowmeter market revenues. By 2007, that percentage had increased to 50 percent.

New-technology flowmeters are overtaking traditional technology flowmeters at the average rate of one percent per year, considering the entire worldwide flowmeter market. Flow Research forecasts that by 2012, revenues from new-technology flowmeters will account for 55 percent of total worldwide flowmeter revenues. Of course, the new-technology flowmeter market has the potential for growing even faster. This is a story worth watching!

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Dr. Yoder is the author of "Volume X: The World Market for Flowmeters, 2nd Edition," which was published in April 2008 by Flow Research. Flow Research maintains a knowledge website devoted to the worldwide flowmeter market: www.floweverything.com. Another recent project is "The World Market for Steam Flow Measurement," published in March 2008 by Flow Research. Flow Research also publishes a quarterly report on the energy industries called the Energy Monitor. This publication is part of the Worldflow Monitoring Service (www.worldflow.com).

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total shipments of all flowmeters worldwide