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**Worldflow Market Barometer *Flash Report*****API Sends Vortex Flowmeter Standard to Ballot**

Wakefield, Massachusetts, March 13, 2006 -- Responding to the expressed needs of both end-users and manufacturers of vortex flowmeters, the American Petroleum Institute (API) has created a proposed standard for the use of vortex flowmeters for custody transfer operations. Work on the standard has been underway for about two years. The standard applies to both liquid and gas flowmeter operations. The standard is the work of the API's Committee on Petroleum Measurement (COPM), which is made up of representatives of both the supplier and end-user communities.

Flow Research has long been among the groups calling for the development of a custody transfer standard for vortex flowmeters. Our experience in studying competing flowmeters, especially ultrasonic and Coriolis, shows that the presence of a custody transfer standard can have a significant impact on the market. Sales of Coriolis and ultrasonic flowmeters have increased substantially after the approval of an industry association report or standard, especially for gas flow measurement. The absence of such a standard for vortex flowmeters has hindered market penetration by these meters, especially in the oil, gas, and refining industries.

According to Wade Mattar of Invensys/Foxboro, Chairman of the API Working Group that is considering the standard, "The industry has used vortex flowmeters for some time. Now we are trying to get a standard written so that they can be used in more applications." The ballots for the standard were due back on March 10, 2006. The API Committee on Petroleum Measurement is scheduled to meet on March 21 to consider the results of the balloting. The standard could be approved at that meeting. Alternatively, there could be a delay while comments on the standard are incorporated, or otherwise taken into account. Of course, there is no guarantee that the standard will be approved, but a significant amount of momentum has already been generated towards this end.

## What It Means

While the vortex flowmeter market languished from 2000 through 2003, 2004 and 2005 have been years of significant growth for this market. Approval by the API of this custody transfer standard would almost certainly have a substantial positive impact on sales of a type of flowmeter that is already showing significant growth. Vortex flowmeters have significant advantages that end-users are beginning to recognize. They do not have moving parts, and are relatively simple to install. In addition, vortex flowmeters are the most versatile type of flowmeter, in that they can measure steam, liquid, and gas flows with almost equal ease.

The following is an excerpt from the beginning of the draft standard proposed by API:

## INTRODUCTION

This document describes the design, installation and operation of vortex shedding flowmeters for the measurement of fluid flows, especially hydrocarbon flow measurement.

Vortex shedding flowmeters are inferential meters that derive flowrate by measuring the shedding frequency of vortices which are with a few exceptions proportional to flowrate. The vortices which are sensed electronically are generated by placing a bluff body in the fluid path. Numerical computational techniques are then used to compute the fluid velocity and flowrate at line conditions.

Vortex shedding flow meters may be utilized to measure the flowrate of liquids, gases and steam.

## 2.0 SCOPE:

This document

- a) provides generic information on vortex shedding flowmeters, including glossary, and sets of engineering equations useful in specifying performance;
- b) describes vortex shedding flowmeters in which alternating vortices are shed from one or more bluff bodies installed in a closed conduit;
- c) describes how the vortex shedding frequency is used to determine the velocity in order to infer the volume, mass, and energy flow rate and how the total fluid flow through the meter over a specific time interval can be measured;

- d) applies only to fluid flows that are steady or that vary slowly in time. For fiscal measurement the output of the flowrate must be within the acceptable limits of steady state flow rate;
- e) applies to single phase Newtonian fluids and running full in closed conduit;
- f) describes the physical components of vortex shedding flowmeters and identifies need for inspection, certification, and material traceability;
- g) addresses the effect of fluid properties, installation, and process conditions that may affect vortex shedding accuracy, and describes guidelines for reducing or eliminating their influences;
- h) defines the method for calculating uncertainty of the flowrate measurement;
- i) defines the meter output requirements and necessary information pertaining to the meter output for the purpose of fiscal measurement of hydrocarbon fluids; and
- j) provides calibration and/or performance verification guidance for the field application.

If the balloting on the new standard is successful, the possibility exists that the American Gas Association (AGA) will take up the topic and issue its own report on the use of vortex flowmeters for measuring gas flow. If this happens, it is likely to provide an additional boost to the vortex flowmeter market.

Flow Research has just completed a new worldwide study on vortex flowmeters that began shipping last week, called **The World Market for Vortex Flowmeters, 3<sup>rd</sup> Edition**. One finding is that the worldwide vortex flowmeter market has increased substantially in size since 2002. The study, which contains 35 supplier profiles, also identifies a number of mergers and acquisitions that have occurred in the past several years. We believe that Flow Research is the only market research company that is currently studying the vortex flowmeter market.

This Flash Report is provided as a service to subscribers to Flow Research's **Worldflow Market Barometer**. The **Market Barometer** follows developments in the flowmeter industry on a quarterly basis. Flow Research will continue to monitor the progress of this standard, and will report the results back to subscribers of the **Worldflow Market Barometer**. Watch for additional discussion of this subject in the upcoming issue of the **Market Barometer** for Q1 2006.

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