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For Immediate Release

Flow Research: New Study Shows Need for More Gas Flow Calibration Facilities

Wakefield, Massachusetts; March 10, 2016 — A new research study from Flow Research provides detailed information about the flow calibration facilities around the world. According to this new study, *Worldwide Gas Flowmeter Calibration Facilities and Markets*, there are more than 50 flowmeter calibration facilities worldwide. The study contains detailed descriptions of the capabilities of the different flowlabs, based on extensive interviews, personal visits, and questionnaires.

The gas flow calibration study is called *Worldwide Gas Flow Calibration Facilities and Markets*. It quantifies the dollar value and number of eight types of flowmeters calibrated worldwide and in seven world regions. According to this study, North America accounted for 23 percent of the value of flow calibrations by independent labs in 2015. The largest region was Europe.

Why Gas Flowmeter Calibration Is Unique

When flowmeters are calibrated, the best results are obtained when they are tested under the same conditions as those under which they measure flow. This includes the temperature and pressure conditions, the fluid type, and the upstream and downstream piping. For this reason, end-users sometimes ship the accompanying piping and any flow conditioner along with the meter being calibrated. This is often done with differential pressure meters using orifice plates, and the entire assembly is called a meter run.

For large flowmeters, such as turbine and ultrasonic meters having diameters of 12 inches or more, calibration can present special challenges. The most effective way to calibrate these meters is to have natural gas flow simultaneously through the meter being calibrated and the reference meter. This typically involves flowing natural gas at very high speeds. It can cost millions of dollars to build a facility capable of flowing natural gas at these high speeds. For this reason, most large turbine and ultrasonic meters are initially calibrated at an independent lab before being put into operation. For the same reason, end-users usually go to an independent calibration facility when having their large flowmeters recalibrated.

Two Solutions for High Speed Gas Flow

The high speed and high pressure flow of natural gas necessary for calibrating large natural gas flowmeters can be generated in one of two ways. One way is to build a flow calibration facility on a natural gas pipeline, and use the high speed natural gas flow to do the flowmeter calibrations. The other way is to build a closed loop system that uses equipment within the facility to generate the high speed flow.

The first solution is the one chosen by Colorado Engineering and Experiment Station, Inc. (CEESI). CEESI built a high speed natural gas test facility in Garner, Iowa that opened in 1999. CEESI's test facility is built on a TransCanada Pipeline that is already flowing high speed natural gas. A portion of this natural gas is diverted from the pipeline to be used for test purposes. The natural gas is flowing at speeds that are sufficient for test purposes. After being used for flowmeter calibration, the natural gas is returned to the TransCanada pipeline.

NMi Euroloop, located in the Netherlands, has chosen the closed loop solution. This facility was opened in 2010 mainly to perform high speed natural gas flow calibrations. NMi Euroloop uses a combination of high speed blowers, piston compressors, and an ammonia cooling system to generate the high pressures, correct temperatures, and high speed natural gas flow to calibrate large natural gas flowmeters. One advantage of this system is that it gives NMi Euroloop complete control over the natural gas used for calibration purposes. It also enables the facility to run around the clock if it chooses to do so. NMi Euroloop uses seven turbine flowmeters as master meters, and these are monitored by seven ultrasonic meters.

The Need for More Calibration Facilities

The need for more calibration facilities can be seen by considering both the installed base and the steady growth of the gas flowmeter market. While the turbine flowmeter market is growing more slowly than the ultrasonic flowmeter market, both markets are expanding steadily every year. The ultrasonic flowmeter market for custody transfer of natural gas is one of the fastest growing niches within flow. The turbine and ultrasonic flowmeters sold in 2016 will need to be recalibrated at some point, most likely within three to five years. And there is already a large installed base of turbine, ultrasonic, and differential pressure flowmeters sold three to five years ago that may need recalibration this year. The growth in the gas flowmeter market is outpacing the growth in facilities for calibrating gas flowmeters.

According to Dr. Jesse Yoder, president of Flow Research:

“Some flow calibration facilities report that they have a waiting list for flow calibrations. And some end-users report having to wait as long as three months for certain flowmeters to be recalibrated, especially ultrasonic and turbine meters for custody transfer of natural gas. This is an issue that is of concern to the entire industry. It is one reason why Flow Research has formed a Flow Recalibration Working Group (FRWG) (<http://www.flowcalibration.org>), . This group is currently made up of 16 well-known authorities among the flow calibration and flowmeter manufacturing community. We are planning our first meeting in June 2016. One purpose of the group is to look at criteria for determining when a flowmeter needs recalibration. Another purpose is to look at the potential need for more flow calibration facilities.”

About Flow Research

Flow Research, with headquarters in Wakefield, Massachusetts, is the only independent market research company whose primary mission is to research flowmeters and other instrumentation products and markets worldwide. Flow Research has years of experience in doing both off-the-shelf studies and custom work. Published studies can be purchased by anyone interested in the topics. These studies are developed through interviews with suppliers, distributors, and end-users, and are presented in a clear and consistent manner. Topics include all of the flowmeter technologies – both new and traditional – as well as temperature sensors, temperature transmitters, level products, and pressure transmitters.

A growing area of interest – especially related to custody transfer – is flowmeter calibration. Flow Research has recently completed two studies, one on gas and one on liquid, of flow calibration facilities and markets. The studies are called *Worldwide Flow Calibration Facilities and Markets* (<http://www.flowcalibration.org>).

The company also focuses on the energy industries, especially on oil and gas production and measurement. Special topics include custody transfer, multiphase measurement, and liquefied natural gas (LNG). A series of quarterly reports called the Worldflow Monitoring Service provides regular updates on both the flowmeter markets and the energy industries (<http://www.worldflow.com>).

For more information, visit <http://www.flowresearch.com> or call +1 781-245-3200.