



**SIEMENS**

# Siemens clamp-on flowmeters increase performance of gas pipeline

## Process Instrumentation

SITRANS FUG1010 portable ultrasonic clamp-on flowmeters used to check and verify the performance of existing metering equipment in a gas pipeline enables gas distribution company to increase operation efficiency by revealing measurement issues and discrepancies.

Gas transmission companies today offer a balanced approach to meeting the growing demands in the USA for clean burning natural gas, while supporting, developing and utilizing various programs that enhance environmental compliance and minimize waste. Part of this strategy is to make sure that little, and preferably, no gas is lost in the thousands of miles of pipelines that run across the American continent. And by making sure that the pipeline surveillance equipment is running properly and at the highest possible performance, thousands of dollars can be saved on a daily basis.

### Background

One company that has been optimizing its operation through the use of gas flowmeters is located in the Western USA. The service provider delivers gas to more than nine million customers through a pipeline with a total capacity of more than 1.7 billion cubic feet per day. The line, which is more than a thousand miles long, encompasses several compressor stations, receipt meter stations where the gas volumes entering the pipeline are measured and more than fifty delivery meter stations measuring the gas volumes delivered from the pipeline. To run a gas line like this efficiently requires several flowmeters strategically located along the line.

In this case, a mix of permanently installed and transportable clamp-on flowmeters from Siemens is used: the dedicated SITRANS FUG1010 meters provide the main control systems

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with flow rate data, while the transportable version is frequently relocated from site to site fulfilling the need to verify and check the performance of the permanently installed instruments\*.

The flowmeters from Siemens play a crucial role in what is considered one of the most sophisticated computer networks in the natural gas transportation industry. From the fully automated real-time pipeline gas control center, operators can see exactly what is flowing through the pipeline at the exact time it is flowing.

#### The problem

Prior to installing the Siemens meters the gas company struggled with the pipeline performance. Discrepancies between the receipt and delivery metering stations were found and since the company did not have portable meters at hand for verification purposes, they weren't able to tell exactly what caused these apparent misreadings.

Rather than spending money and time on trouble-shooting the entire system, it was decided to future-proof it instead by means of SITRANS F US clamp-on ultrasonic flowmeters from Siemens. The main reason for this decision was that the sensors can be clamped on to the outside of the pipes eliminating the need to stop the flow and to cut the pipe resulting in lost revenue and additional installation costs.

#### The solution

After discussing the options with a Siemens representative, the gas company executives and operation managers decided to go with a mix of SITRANS FUG1010 dedicated and portable flowmeters.

The dedicated meters were strategically located at the inlet, compressor, delivery and outlet stations feeding the control center with constantly updated and accurate flow data. By comparing this day-to-day real-time data the operators get an exact picture of the pipeline performance making discrepancy and measurement issue detection much more effortless and quick. This solution offered a tremendous improvement compared to the company's previous system and to more commonly used applications featuring orifice plates and displacement transmitters coupled with a flow computer.

To supplement the dedicated meters, a number of transportable SITRANS FUG1010 meters were included as an integral part of the installation. Transportable flowmeters easily accommodate the growing need for check metering and validation tests required in the industry to maintain proper performance documentation for various management and regulatory bodies.

So by including transportable meters in the complete package, the gas company now has a system that not only ensures easy and cost-efficient installation, accurate operation and optimized performance; it also enables fast detection and trouble-shooting of any system inconsistencies.

This makes the system very valuable in terms of minimizing product and revenue losses as well as lowering the probabilities of encountering environmentally hazardous issues.

#### The product

SITRANS FUG1010 clamp-on ultrasonic flowmeters offer many advantages in capabilities and application versatility. From high performance to ease-of-installation, availability of single, dual, and four beam configurations to a selection of IP65 (NEMA 4X), IP65 (NEMA 7) compact and IP65 (NEMA 7) wall mount enclosures as well as transportable and dedicated versions.

The ultrasonic gas flowmeter is the best choice when faced with applications that require:

- Tolerance of wet gas
- High reliability combined with low maintenance
- High turndown ratio
- Low cost of installation and ownership
- Application diagnostics
- No pressure drop
- Insensitivity to pressure control valve noise

\* The transportable gas meter is a dedicated version in a sturdy rolling case that comes complete with the necessary equipment needed to perform gas measurement.