



APPLICATION REPORT

Oil & Gas

Flow volume control of natural gas storage

- Gas transport from onshore to offshore platform
- Ultrasonic gas flow measurement for storage and delivery processes
- Accurate alternative to mechanical gas flowmeters



1. Background

With the demand for gas growing, the storage capabilities for gas are increasingly playing a vital role to keep a nation's gas supply secure and flexible. In this respect the Castor Underground Gas Storage (UGS) project has been one of the most important investments in the Spanish gas network in recent years. In the city of Vinarós an onshore plant for the treatment and conduction of natural gas ensures that the gas can be effectively transported and finally stored in an depleted offshore oil field.

2. Measurement requirements

The storage terminal operator Escal UGS was looking for a cost effective measurement solution to control the flow volume of the natural gas transported from the onshore storage terminal to the offshore platform, i.e the storage pit, and back from the storage to delivery. This required a redundant flowmeter for the delivery of natural gas to the measurement station as well as a site internal flow control of natural gas and a measurement of the natural gas used as fuel for local consumption.

3. KROHNE solution

KROHNE delivered 3 units of the OPTISONIC 7300 F. One device was installed in a special configuration as dual universal ultrasonic gas flowmeter with a nominal size of 30"/600 lbs (DN 750) for delivery of gas to the measurement station. The device is capable of measuring a wide flow range of 0...900.000 kg/h. A second flowmeter, 24"/900 lbs (DN 600), was used for flow control in the gas storage process. A third OPTISONIC 7300, 2"/150 lbs (DN 50), was applied for measuring the local consumption of natural gas as fuel gas.

As demanded by the customer, KROHNE delivered the OPTISONIC 7300 F in accordance with special painting procedure specifications.



OPTISONIC 7300 unit for flow control in the gas storage process

4. Customer benefits

In using the OPTISONIC 7300 F the storage terminal operator Escal benefits from an optimised volume control of the natural gas storage. The 2 beam ultrasonic flowmeter offers excellent long term stability and repeatability. No moving parts are used and the device doesn't need recalibration and maintenance. The OPTISONIC 7300 allows for a wide measurement range. Instead of customising a regular but more expensive CT ultrasonic flowmeter, KROHNE individually designed the solution according to the non-CT requirements which makes it a very economical device for the customer's natural gas application.



OPTISONIC 7300 unit for measuring the local consumption of natural gas

5. Product used

OPTISONIC 7300 Ultrasonic gas flowmeter

- High accuracy
- Excellent long term stability
- High performance over a wide measurement range
- Diagnostics to validate flowmeter and process
- Low investment, low operational costs



Contact

Would you like further information about these or other applications?
Do you require technical advice for your application?
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