

Huge gas reserves – huge meters

New standards in ultrasonic flow measurement

With almost 1000 trillion cubic feet of natural gas, Iran has the second largest oil reserves in the world, accounting for 15% of the world's known natural gas reserves. The search for oil fields led of course to the discovery of natural gas fields, but for a long time these were not exploited. The biggest oil and gas fields are located in the South West, in and around the Persian Gulf. Among the countries of the Middle East region, Iran not only has the largest gas reserves, but also owns 17% of the oil reserves with a daily production yield of 4,500,000 barrels.

In the sixties, Iran started to build large pipelines to its big cities where natural gas was used in the first instance for domestic purposes and later for industrial applications. The pipeline diameters vary from 24" (DN 600) up to 56" (DN 1400) and they are operated at a pressure of about 80 bar. Most of these transportation pipelines – named IGAT: 1, 2, 3 or 4 – lead from the South West to major cities and via Tehran in the direction of Turkey. During the past few years, the government has strongly encouraged the Iranian industry to use natural gas, which resulted in today's situation of insufficient pipeline capacity. This is why Iran is working on big gas transportation projects, not only to meet its own needs, but also to be able to export natural gas now and in the future to neighbouring countries.

For a company like ours, which is proud to supply highly accurate turbine and ultrasonic meters for high-pressure/high-load applications, the orifice plate meters used in these huge pipelines have always been a thorn in our side. In 2001, we started to hold seminars on ultrasonic metering managed by our dedicated team and well supported by our local agent, ACC & EI. The first seminar was given in Tehran in front of more than 200 specialists from the Iranian gas industry. Over the next two years, we held a lot of further seminars and also welcomed a few Iranian delegations to our branches in the Netherlands and Belgium, finally resulting in acceptance and official approval by NIGC, the National Iranian Gas Company. Despite some political games played by supporters of orifice plates, the fact that the ultrasonic flow measurement technology had proven successful in very many countries in the world finally made the change happen.



48" ANSI 600 ultrasonic meter in operation in Iran

Ultrasonic meters allow a more compact layout of metering and regulating stations. In addition, pressure loss is enormously reduced so that fewer compressor stations are needed in this large transmission network, resulting in cost savings and lower energy consumption.

The first ultrasonic meter, a Q Sonic-4C 16 inch (DN 400), however, was sold in Hamadan in 2003 for use in a power plant. The reasons for this were completely different to the ones described above. Due to damage caused by dirt, water and turbulence, the existing turbine meters had to be repaired every six months. Following our consultation, Hamadan Gas Company started to place Elster-Instromet ultrasonic meters in the upstream sections of filters. This has worked out successfully and since then developed into a showcase for many other gas companies.

After this first success in Hamadan we sold several meters of up to 48 inches in diameter. For all those who are not very

familiar with inch sizing, the photos in this issue give quite a good impression of what 48 inches in diameter means. We have also been involved in the IGAT 5 project, a special project on a 48"/56" transportation pipeline for natural gas with high sulphur content (7000 ppm), for one year now. Elster-Instromet's ultrasonic meters are the only ones suitable for this kind of application.

Success does not happen by chance, and it would not have been possible without the great commitment and efforts of our agent, Mr. Moe Alizadeh, and his team. We will stay on the ball and we are investing to continue leading this high-end segment of natural gas measurement without losing sight of the lower segments.

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