

Toscana Energia reduces noise contamination and increases throughput using Emerson FL/SRS axial flow regulator

RESULTS

- Reduced station noise level to meet legal requirements and environmental affect
- Saved 10k€ by eliminating the need to purchase additional sound absorption materials
- Increased yearly gas delivery by 82k€
- Reduced unplanned downtimes by 50%

APPLICATION

Natural gas city gate pressure reduction station.

CUSTOMER

Toscana Energia is the main natural gas distribution company in the region of Toscana, Italy, and services 102 municipalities.

CHALLENGE

Toscana Energia had a city gate station equipped with 6" top entry regulators. Natural gas consumption increased as the local neighbourhood was being developed, and the noise generated by the regulators began to exceed legal requirements.

The high level of noise was not in accordance with the Directive 2002/49/EC regarding the assessment and management of environmental noise, nor was it in compliance with the Directive 2003/10/CE outlaying the minimum health and safety requirements regarding the noise exposure of workers.

At the same time, during winter peak consumption periods, the natural gas station was now becoming overburdened.

This new situation drove the customer to search for a better noise reduction solution but also the ability to cope with the periods of peak demands.



PRESSURE REGULATOR

"Emerson Type FL Axial Flow Regulators with Integrated SRS Silencer meet legal noise requirements while increasing city gate gas delivery"

Eng. Marcello Rubino

Natural Gas Distribution Manager
Toscana Energia S.p.A.



Toscana Energia City Gate before upgrade - 6" Top Entry Regulators without Integrated Silencers - With wall panels & pipe insulation



Toscana Energia City Gate after upgrade - 6" FL Axial Flow Regulators with Integrated SRS Silencers - Without wall panels and pipe insulation

SOLUTION

Toscana Energia replaced their old regulators using Emerson's FL series regulators with integrated SRS silencer.

Compared to top entry regulators, the axial flow technology offers an efficient flow path to maximize flow capacity, and in this case, the same size regulator as the original installation.

Toscana Energia is now able to increase their city gate capacity and meet higher natural gas demands during the winter months. There is no need to install larger size regulators, therefore there is no impact on the city gate station layout.

By replacing the outdated top entry regulators with FL technology, unplanned downtime was reduced by 50%, increasing the city gate station's reliability.

The integrated SRS is a two path noise abatement system reducing noise directly in the exact location:

- on the regulator seat
- on the regulator outlet flange.

This noise attenuation solution permitted the customer to remove all existing sound absorption material while complying to the maximum noise emission legal requirements and local worker safety legislation.

By removing wall panels and pipe insulation Toscana Energia was able to reduce their operation costs due to easier maintenance and periodical check procedures/execution. The station is an open-air installation without noise protection.

Because of these benefits Toscana Energia chose to use the FL solution on another city gate station where they faced the same type of challenges.



6" FL Wide-Open Monitors and 6" FL/SRS Regulators installed in Toscana Energia City Gate, Ugnano Florence, Italy

Emerson Process Management Regulator Technologies, Inc.

Americas - Worldwide Headquarters

3200 Emerson Way
McKinney, Texas 75070 USA
T: +1 800 558 5853
T: +1 972 548 3574
F: +1 972 542 6433
www.emersonprocess.com/regulators

Europe

T: +39 051 419 0611

Asia Pacific

T: +65 6770 8337

Middle East

T: +971 4811 8100

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