

NIVELCO instruments in Vienna's sewer system



NIVELCO and our company in Austria have been partners and selling **NIVELCO** instruments since 1995. This close cooperation between the two companies was reborn in 2007 under the banner of **Göth Solutions GmbH**. Since that date this relationship with **NIVELCO** has been better than ever, which has enabled us to keep up with our major competitors.

In 2010, after much discussion a great wastewater treatment project came out to tender. We did not hesitate, and won the instrumentation project for **NIVELCO**.

Many years ago, in 1997-98, we delivered several devices to the sewage works in Vienna, but after the successful trial period, we were crowded out by E&H or NIVUS products, despite our competitive prices. However, the new VEXAT regulations involving the pumping stations for sewage works fortunately brought **NIVELCO** back into contention.

These sewage shafts became classified as potentially hazardous Ex Zones, so replacement of all the instruments became necessary. Thanks to two years of negotiation and numerous product demonstrations, **NIVELCO**'s new generation **MultiCONT process controllers** were installed to monitor the level of liquids in Vienna's sewer system. This system is famous for its starring role in 'The Third Man' film.



The instrumentation tender demanded many requirements:

- Universal control units with up to 8 relay outputs in contrast to the old ones with only 1-2 relays
- Minimal necessity for replacement components
- IP68 rated sensors
- Transmitters with up to 100 m cable length
- Easily expandable relay outputs
- Replacement units free of charge in case of service
- Provision of on-site technical support



According to the preliminary surveys and the test operations, the **MultiCONT PRC-220-6 Ex** type multichannel process controller was installed and expanded with **UNICONT PJK-102-4** and **PJK-120-4** universal interface modules. Level measurement is done by **EasyTREK SPA-380-8 Ex** type integrated ultrasonic transmitters with 50 m and 100 m cable lengths.

The previously used E&H and NIVUS equipments were replaced with our **MultiCONT** controller system thanks to its flexibility because it is easily expandable with **UNICONT PJK** relay and current output modules. Moreover the possible troubleshooting became easier and more cost-effective. With **NIVELCO**'s solution the number of the installed devices could be reduced to only 5.

Two meters under the famous Karlsplatz of Vienna, an instrument rack hides a **MultiCONT** unit. The location is at the other side of the square's famous tourist sightseeing point, given the name 'The Third Man'.

The entrance to the drain system and the **MultiCONT** units is only 60 cm wide.

The ultrasonic transmitters with their 50 m and 100 m cable lengths provide a reliable source of information for the controller about the level in Vienna's sewer system.



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Shortly after the instruments were put into operation, some failures had been detected in the HART communications link between the transmitters and **MultiCONT**.



Göth Solutions made an immediate on-site diagnosis and replaced the **MultiCONT PRC-220-5 Ex** process controller with another similar model, powered by 230V AC. We also examined the electrical system, but did not find any abnormality which could have resulted in this kind of communication problem.

With our many years of experience of industrial measurement technology we were able to realise the source of the problem. The electrical system in the Viennese underground was producing interference in the HART communications. The solution was to replace the **MultiCONT** with a galvanically isolated 24V DC model.

With this **MultiCONT PRC-220-6 Ex** model the HART communication has become reliable, and not shown any further problems.



Summarising this successful project, we have to be aware of the environment in a metropolis like Vienna, and we have to consider that reliable HART communication near a high current underground system can be performed only with galvanically isolated units. We are proud that co-operating and using our professional knowledge, coupled with high-quality **NIVELCO** products enabled us to achieve such success as in Vienna's sewer system.



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