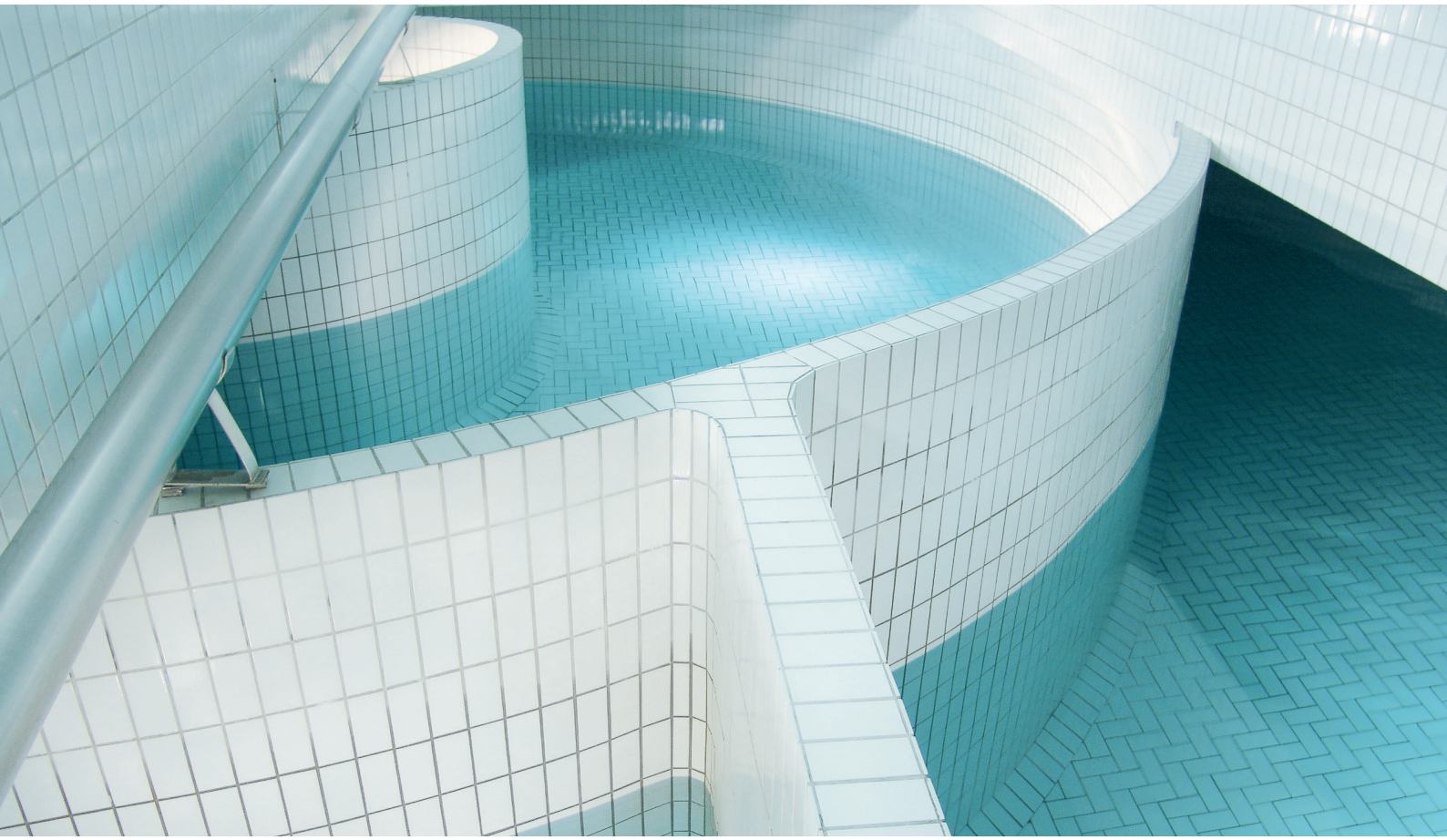
COPA-DATA's SCADA Solution Ensures a Water Supply for 80,000 People

zenon – and Everything Flows

Securing and protecting the quality and quantity of drinking water is the focus of Leibnitzerfeld Wasserversorgung. It supplies 80,000 consumers with the most important utility. It recently switched its control systems to the zenon SCADA software from COPA-DATA to improve the efficiency and flexibility of its operations, as well as comprehensive maintenance of equipment and its pipeline network, in order to ensure a seamless supply of drinking water of the highest quality.

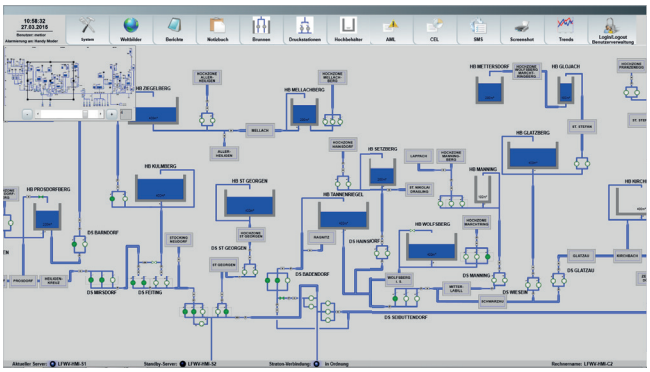


Although 71% of the earth's surface is covered in water, it is by no means a given that all people have drinking water in sufficient quantity or of a sufficient quality. The main task of Leibnitzerfeld Wasserversorgung GmbH (LFWV) is to supply around 80,000 people in 28 municipalities in the south of Austria with clean drinking water.

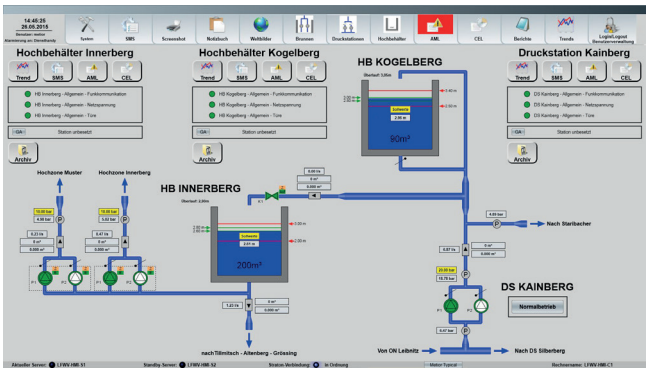
Founded in 1910, the non-profit company with 22 employees operates eleven well systems, 60 pressure riser facilities and 41 high-level tanks with a capacity of 10,000 m³ as well as a network of pipes that covers approximately 385 km. With measures for securing and protecting ground water and for the ongoing monitoring of the quality of drinking water, LFWV sustainably guarantees the provision of around three million cubic meters of drinking water per year.

THE PREVIOUS TELECONTROL SYSTEM HAD REACHED ITS LIMITS

In order to be able to offer its end consumers a seamless supply of water 24 hours a day, 365 days a year, LFWV makes ongoing



With the zenon Worldview, the LFWV technicians always have access to the entire equipment – even when they are not on site.



The degree of detail in the station overview – whether individual parts of the equipment or larger, connected sections of equipment – can be selected freely.

investments in the modernization of its equipment to increase efficiency. The company therefore put its first remotely-controlled equipment into operation in 1950, in order to be able to react more quickly to situational changes.

This equipment had not, of course, remained unchanged when LFVW decided to take it out of service. "The existing telecontrol system met all requirements to our satisfaction," explained LFWV CEO Franz Krainer. "However, it contained numerous proprietary components and the lack of standardized interfaces was a significant obstacle to the further expansion of the system."

A DEMANDING RANGE OF CRITERIA

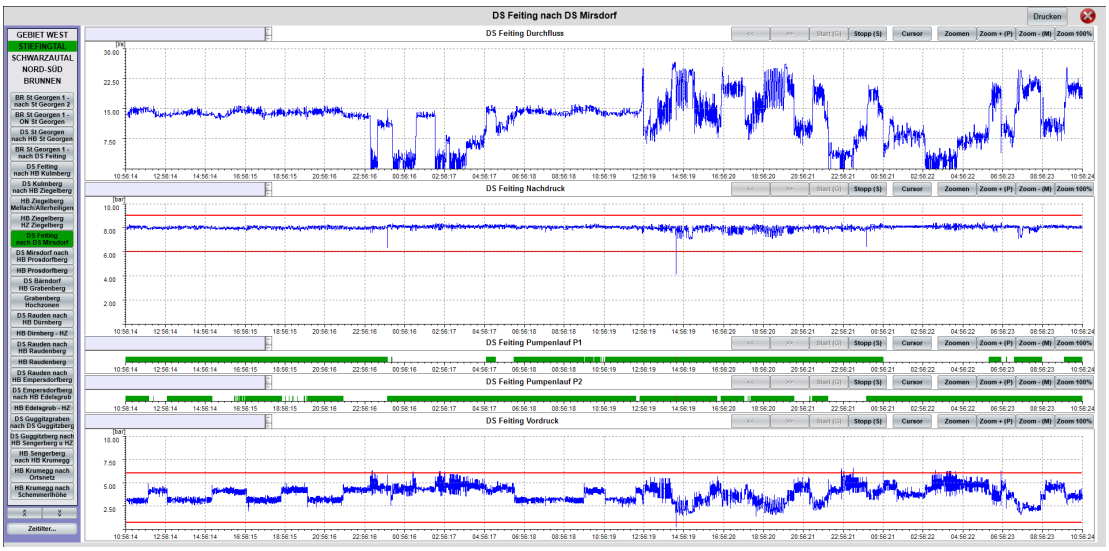
LFWV decided to carry out a tender process to pre-qualify appropriate providers. The aim was to find a modern, open system with standardized interfaces that could be adapted to the existing circumstances as far as possible. "As a result of the different ages of the equipment, there is an enormous range of locally-installed systems and different data transfer routes," explained Krainer. "A comprehensive conversion was out of the question, so we looked for a system that had very wide-ranging compatibility properties."

A significant stipulation in the tender was that the new system should make monitoring and maintenance more flexible; it was a requirement that maintenance technicians should be able to carry out their roles not just in the control room, but also at any location using tablet PCs. Because one of the main priorities of LFWV was the best possible security of supply, any tendered system had to be constructed in a fail-safe manner.

The selection of a suitable system was made on the basis of a range of criteria that the LFWV project team used to evaluate live online presentations from four manufacturers. The zenon SCADA system from COPA-DATA made the running. In numerous installations zenon has proven itself flexible and open but it primarily scored points on technological criteria. Remote maintenance and a hot reload function allow seamless maintenance, control and updating without stopping the equipment. The high system stability and data security also went in favor of zenon, as well as the simple transfer of existing data. Furthermore, COPA-DATA already had, from many applications, well-founded expert knowledge in the energy and infrastructure sector.

SEAMLESS SYSTEM SWITCH DURING LIVE OPERATION

A particular challenge when implementing the system was the fact that the region does not have a plentiful supply of water. It is a technical challenge to guarantee a secure supply. In such a situation, any short-term failure of part of the system can lead to supply disruption. LFWV therefore selected an implementation strategy in which the existing telecontrol system would remain fully operational until there was proof that the new system works for the various sections of equipment.



The trend solution created using the Faceplate technology in zenon increases user-friendliness.

The commissioning of metior Industrieanlagen Planungs- und Beratungsgesellschaft mbH (metior) ensured the implementation's success. The engineering company for electrical and automation systems, based in Graz, has 35 employees and specializes in the solution of complex automation tasks in the process industry. It has been, as a zenon system integrator, a long-term partner of COPA-DATA.

HOLISTIC, MODULAR SOLUTION

In close partnership and coordination with LFWV, metior used the open, modular system structures in zenon's engineering to create a tailor-made but, nevertheless, modular application . In it, the archive data from the previous system was taken on, so that access to historical information is also guaranteed. "The engineers from metior were very cautious and first carried out a comprehensive analysis of the equipment situation," remembers Krainer. "They often presented alternative possibilities for a solution before implementation."

The system portrays the water supplier's workflows and has high availability and failsafe performance. To achieve this, it is installed on two redundant servers. In addition, the workstations in the central control room in Leibnitz as well as the mobile devices for the maintenance technicians are equipped with numerous zenon Clients.

The control system includes the integrated PLC system zenon Logic. This controls all local control computers and I/O modules at the connected end points, as well as the remote end points by means of a radio master system. Half a year after LFWV placed the order with metior, 93 of the 118 parts of the equipment have been incorporated into the control system via fiber-optic cable, copper cable or radio. The cyclical treatment of 2.213 IEC variables results in 220,000 database entries every day.

FUTURE-PROOF OPERATING CONCEPT

"metior uses zenon for equipment such as that LFWV uses because this comprehensive SCADA solution is tailored for flexible, open and reliable applications," said metior CEO Martin Ableitner. "In addition, zenon can be integrated very easily into existing infrastructure with existing functions such as the simple switching of pumping stations by means of the IEC 60870 telecontrol driver and dual commands."

The fact that zenon also has very wide-ranging graphics capabilities as well as innovative Faceplate technology enabled metior to implement an operating design that is just as ergonomic as it is flexible. On two large-screen overview monitors and two screens per workspace computer in the control room, the zenon Worldview offers operators an entire overview of the equipment, displaying geographic information as well as information regarding the hydraulic infrastructure.

Users can increasingly zoom in on the overview screen by selecting an area, and can drill down to detailed views of individual stations. The capability of zenon to display graphics

> *Using the Faceplate technology in zenon, metior created a superior trend solution with an even better overview.*

FRANZ KRAINER, CEO OF LEIBNITZERFELD WASSERVERSORGUNG GMBH

in very high resolutions enables the simultaneous consideration of attendant areas in the supply network to be viewed with user-friendly zooming.

The trend analysis is an important part of the operating concept. It shows LFWV employees on standby any fluctuation in the water supply within the network at a glance and forms the basis for decision-making and short-term interventions. "The trend tool in the previous system was specifically programmed for us and was very good and highly efficient," says Krainer. "But using the Faceplate technology in zenon, metior created a trend solution that exceeds the benefits of that and also guarantees an improved overview."

MOBILE, FLEXIBLE OPERATIONS MANAGEMENT

Switching the control system to zenon has enabled the use of mobile end devices and resulted in a significant change to the way the maintenance technicians work. "They can now perform standby tasks at home," says Ewald Lambauer, deputy manager at LFWV, citing a significant advantage of zenon's web-based user interface. "What is almost even more important is that, for on-site deployment too, they always have an overview of the complete equipment on their tablet PC so operations are always under control."

ZENON AS A CONTROL SYSTEM AT LFWV

- Failsafe performance through server redundancy
- Simple switching of pumping stations via IEC 60870
- Overview of hydraulic and geographic information thanks to zenon Worldview
- Simple operation
- Location independence and improved capabilities to respond via mobile web clients incl. SMS messaging service