Verl-Sende: Innovative solutions with Grundfos Digital Dosing

A large number of wastewater treatment plants worldwide have been in operation for many years, and even decades. A combination of worn or outdated pumps and insufficient capacity causes inefficient operation and makes it impossible to meet the increasing demand from a growing population.
For many of these old plants new pump equipment or even complete overhauls are necessary if the wastewater plants must perform in accordance with demand. And the wastewater treatment plant in Verl-Sende was no exception.

TOPIC:
Grundfos Digital Dosing solution provides massive savings in wastewater treatment plant at Verl-Sende, Germany.

LOCATION:
Germany

COMPANY:
Verl-Sende

The Situation

For years the wastewater plant in Verl-Sende had not been running at optimal performance. This had partly to do with worn and outdated dosing pump solutions. The old dosing pumps were oversized and difficult to control or adjust. With these pumps, the setting of the dosed amount was done indirectly via the manual setting of stroke length.
However, the inaccurate and unreliable manual setting was uneconomical both in terms of additives and manpower. Possible alternatives were inverter frequency control or electrical stroke length regulation, both of which were expensive solutions.

The Grundfos Solution

In June 2001, at the wastewater treatment plant at Verl-Sende in Germany, the dosing of flocculants was carefully examined from a-z. The old dosing pumps were subsequently replaced with a Grundfos Digital Dosing pump, model DME 48-3 AR. At the same time, the control system was changed from openloop control to completely closed-loop regulation with total implementation in the process control system.

After one year of operation the entire dosing process system had been optimised as a result of the easy operating and setting of the pump. The consumption of flocculants was registered during the period and it was found that this was reduced by a massive 50% due to prevented overdosing.

There are currently two Grundfos DME 48-3 AR dosing pumps in operation at the Verl-Sende plant: one continuously doses 4.2 l/h Ferric while the other doses 6.2 l/h polyaluminium hydroxide. The entire process is controlled by a process control system, which accurately calculates the required amount of chemicals and controls the dosing pumps accordingly.

The Outcome

The resultant savings paid back the initial investment in the Grundfos DME dosing pump after a short period of time, and the reduced chemical consumption will continue to benefit plant operation as well as the environment for years to come.