SIEMENS

Peak performance: **level controller pumps up savings**

Intelligent time-of-day pumping routines deliver cost-effective operations

With cost-of-living concerns at the top of everyone's mind, efficient operations are key. For wastewater treatment plants (WWTPs), that starts with pumping routines that avoid peak hours as much as possible. And since a WWTP's operations are only as good as its tools, choosing an intelligent level controller is essential—especially one with a very appealing return on investment.

A typical water treatment company responsible for more than 110 wastewater and storm water pumping station knows that avoiding peak hours would go a long way across all its stations in the system.

On an average day, electricity demand goes up late in the afternoon into the early evening, when people return from work. That means any increase per kilowatt-hour of electricity will add up—for residential users but also for municipal water treatment as it moves wastewater across the city.

Sitrans LT500 is the next evolution of level, flow, and pump controllers for radar and ultrasonic transmitters, transducers – or any 2-wire 4-20 mA device. It is the first choice for any level controller application and features single and dual point measurements, 6 relays, and Modbus RTU, HART, PROFIBUS DP, PROFIBUS PA, PROFINET

siemens.com/sitransLT500

The science behind **savings**

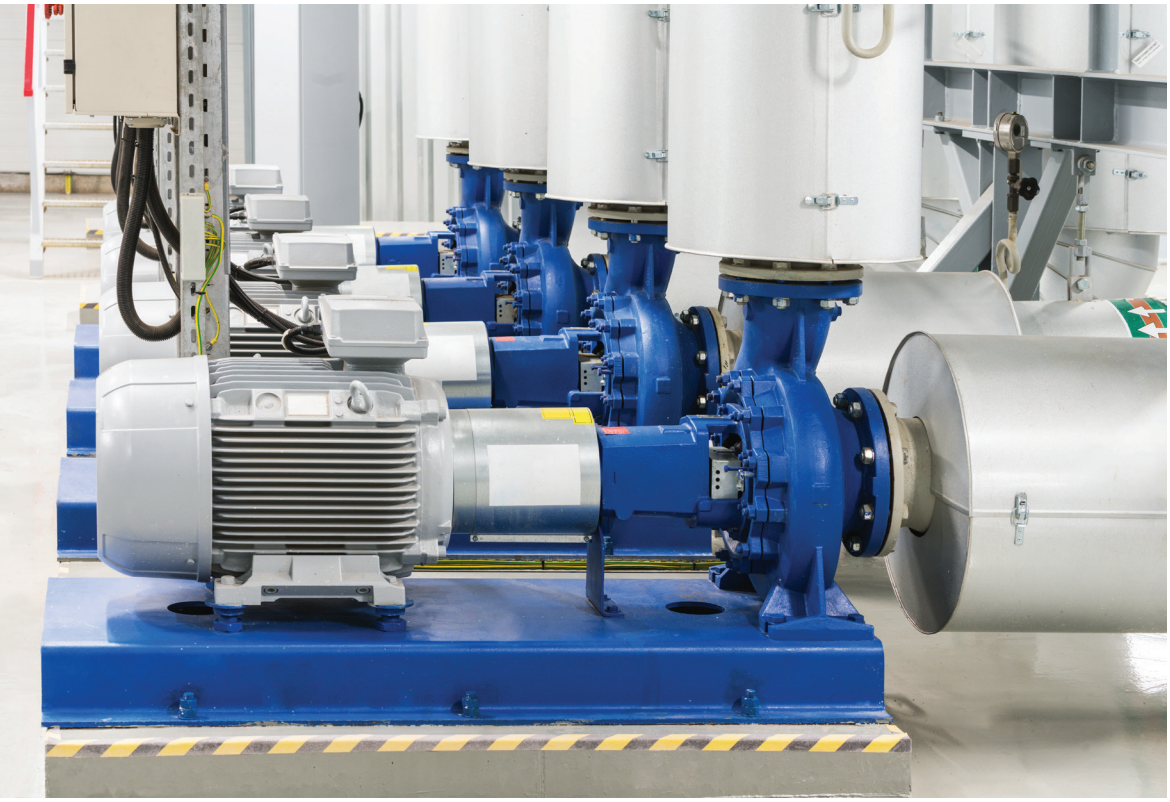
The pumping station in this example could have three pumps plus one standby, all of them running on alternate duty assist.

This type of pumping routine means that pumps start on a schedule. As the wastewater level rises, pump one turns on—and if the level continues to rise, pump two will assist, and then pump three. The pumps switch the leader, rotating back and forth to share the load equally between them.

In these stations, pumps run less than 10-15 minutes at a time, and about 30 minutes per day on average. But even those short periods add up:

- Each pump uses 5.6 kilowatts per hour during operation.
- With a 10:1 peak-to-low peak cost, the pumps cost 28.6 cents during peak hour and 2.8 cents during lower periods.

This difference means that switching to pumping during off-peak hours will save the company around $527.35 per wet well. Apply the Sitrans LT500 across the entire 110-station system and cost savings grow to $58,008.72 per year!



Controlling run times on pumps can substantially contribute to savings in operations. Taking advantage of off-peak hours can add up.

siemens.com/sitransLT500

ROI and monitoring control

For the cost of the level controller, this equates to an extremely fast return on investment—not to mention the substantial benefits for the wastewater treatment plant's environmental reporting or analytics.

And rather than requiring new controller solutions for each type of input, Sitrans LT500 made it easy for the company's operators in terms of device familiarity, installation, and configuration.

But one other advantage some users have yet to try lies in the controller's edge computing abilities.

Rather than burdening the WWTP's control system with hundreds of data points, Sitrans LT500's edge computing features mean it can process and analyze data where it's generated, rather than transmitting it to a central location like a control room.

Even if a pumping station is experiencing poor connectivity or latency issues beyond its gates, the controller can handle pump operations so the control system's PLC can focus on more critical tasks across the overall system, without getting bogged down in communication cycles or other tasks that require computing power.

Intelligent monitoring, in-depth data analytics, and proven cost savings: just another successful application for SITRANS LT500, no matter the time of day!

Published by
Siemens AG

Process Industries and Drives
Östliche Rheinbrückenstr. 50
76187 Karlsruhe
Germany

For the U.S. published by
Siemens Industry Inc.
100 Technology Drive
Alpharetta, GA 30005
United States