SEEPEX.
ALL THINGS FLOW

SEVEN IN A ROW: CHANGING OF THE GUARD

CONVEYED PRODUCT

- Waste water sludge

KEY SPECIFICATIONS

- Modernize sludge transport from drum thickeners
- Monitor real time pump performance
- Optimize output

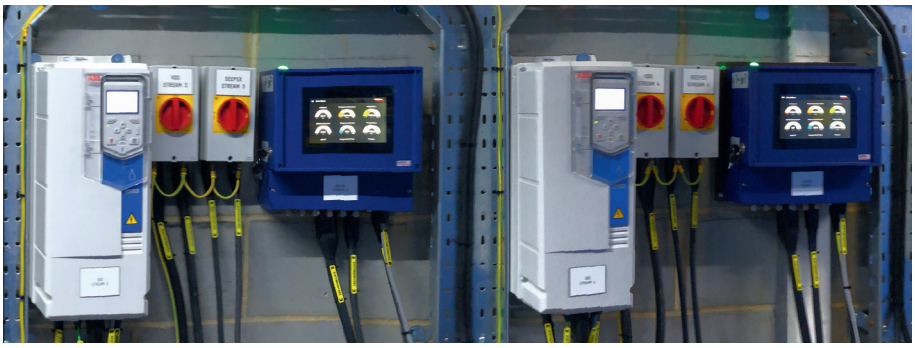
BACKGROUND

Thames Water Ltd. is the largest water company in the UK, providing wastewater services to 15 million customers in the south east of England. SEEPEX has a longstanding relationship with Thames Water, having worked with them in a framework agreement for over 20 years to reduce the cost of ownership of progressive cavity (PC) pumps and to improve the efficiency of processes where PC pumps are in use. Their waste water treatment plant at Mogden has approx. 90 SEEPEX pumps and grinders installed on different applications, including some of the world's largest PC pumps.

TASK

In 2019 Thames Water invested in a plant expansion at Mogden wastewater treatment in new thickened sludge discharge pumps and hoppers in order to optimize the sludge treatment process and increase throughput. The SEEPEX scope of supply was not just seven BTVE 130-12 hopper pumps and new hoppers, but included SEEPEX Pump Monitor and SEEPEX Connected Services, to fully unfold optimization potential. Sensors were fitted to various locations in the process as well as around the new sludge discharge pumps, drum thickeners, feed pumps and grinders.

All signals are sent and recorded in SEEPEX Pump Monitor and then transferred into SEEPEX Connected Services, the installed cloud service. With this setup the pump is converted into an intelligent field device and constantly monitors itself as well as the process, immediately reporting deviations from set points by alarm notifications. Operators can directly access all the information in the field or remotely using Connected Services. Remote Monitoring, Advanced Analytics and Mobile Notification Services (push notifications per email or SMS) can be used for preventive maintenance and process optimization. Advanced Analytics uses the historical data to enable predictive maintenance forecasting as well as identification of abnormal or suboptimal conditions. SEEPEX analyzed all this collected data and discovered potential for process optimization.



HIGHER THROUGHPUT

COST SAVINGS

REDUCED MAINTENANCE COSTS

OPTMIZED TOTAL COST OF OWNERSHIP (TCO)

CAPACITY INCREASED UP TO 30%

SEEPEX PRODUCTS

- Eight Pump Monitor
- Connected Services
- Seven BTVE 130-12 pumps

SOLUTION

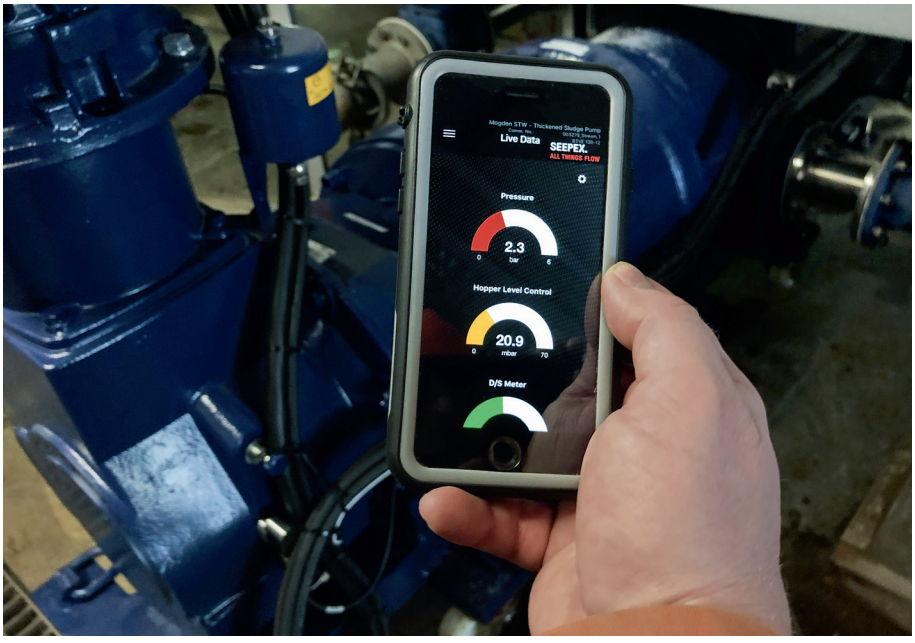
The value of Pump Monitor and Connected Services for process fault finding and optimization was demonstrated after only one month in operation at Mogden. The SEEPEX Pump Monitor installed on the drum thickener discharge pumps and the drum thickeners compared operational performance with equipment loading specifications (provided by the drum thickener manufacturer).

Connected Services identified that the drum thickeners were operating at less than 50% of maximum solids loading. Application expertise supplied by SEEPEX engineers established that the bottleneck in the system was the thickener feed pumps. Data showed they were not able to feed the maximum loading capacity into the thickener; however, based on analyzing the acquired data recommendations were made to adjust the motor frequency, providing a higher throughput at no capital cost.

The initial benefit for Thames Water is that sludge treatment capacity through the drum thickeners can be increased by up to 30% without any capital outlay. Perhaps more importantly though, the increase in capacity has provided a degree of 'future proofing' because this increase makes additional investment unnecessary.

BENEFITS

- Process analysis and optimization
- Pump monitoring
- Reduces reactive capital maintenance and process interventions
- Allows implementation of forward looking capital maintenance



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