

Schaeffler Global Technology Solutions

Water supply

Drinking water supply company, Asia

Integrated condition monitoring system for a water treatment facility

Our customer operates a drinking water treatment facility where, every day, 200 million liters of water can be treated, filtered, chlorinated, and – after a recent expansion – ozonized, and biologically activated. Since the operator is responsible for ensuring a reliable supply of high-quality drinking water for the region, protecting the relevant facilities against failure is a key priority.

The challenge for Schaeffler

The customer was looking for an intelligent condition monitoring system (CMS) to reliably prevent possible failures in his pumping stations. After expanding his facilities by installing the latest technologies and processes for water treatment, the customer then wanted to implement a high-performance system solution that could be fully integrated to carry out condition monitoring.

The Schaeffler solution

Schaeffler's solution comprises a custom-designed condition monitoring system based on SmartCheck sensors. 84 SmartChecks, which have been fully integrated into the customer's infrastructure via the programmable logic controller (PLC), monitor the relevant units in 15 pumping stations. The data can be viewed individually at each pumping station and additionally in the control room. The system also allows the implementation of automated routines such as the triggering of alarms and the emergency shut-off of units.



Technical information about the machine

Machines and capacity:

15 pumping stations

200 million liters per day

Equipment subjected to monitoring:

Motors (bearings)

Pumps (bearings)

Shaft alignment

Balancing

Vanes/impellers (pumps)



SmartChecks monitor all the important units in the pump stations



An individual layout of the switch cabinets was created for the customer according to his requirements by the systems integrator.



Each unit is monitored and visualized separately with a high level of detail

The benefit for the customer

With the help of the condition monitoring system that is completely integrated via the PLC, the customer can almost completely prevent unplanned system down-times, ensuring that high-quality drinking water can be supplied to the region at all times. In addition, damage to equipment can result in high costs amounting to several thousand euros. This risk has also been practically eliminated.

The implemented customer-specific CMS provides very detailed information about vibration, temperature, and other parameters for each individual unit, which is visualized in a complete and easy-to-understand way in the customer's system. The high level of detail provides the perfect data basis for ensuring operational reliability and predictive maintenance. All of this means that the user does not require special knowledge of vibration diagnosis on site.

Special features of the project

The combination of high-precision condition monitoring and simple handling also totally convinced the customer in practice. He is now planning to implement comparable solutions in further applications and at various locations.

Technical information about the solution

Monitoring-system:

84 Schaeffler SmartChecks

Signal transmission and control system:

Schaeffler SmartController

16-channel POE switch

Touch-screen display unit (HMI)

Parameters monitored:

Vibrations

Temperature

Speed