

Wastewater treatment plant in Portugal using Profibus-enabled actuators

Industry: Sewage Treatment
Client: Viseu Sul WWTP, Portugal
Product: IQ3, Profibus

Summary

Wastewater treatment plant, Viseu Sul, required actuators throughout their site to operate penstocks and butterfly valves for flow control. Rotork was able to provide the latest multi-turn and part-turn intelligent non-intrusive electric actuators with Profibus® as a network control system, which successfully met Viseu Sul's requirements.

Overview

The Viseu Sul WWTP in Portugal's Viseu County is the first in the country to adopt advanced membrane filtration (MBR) wastewater treatment technology. The highly automated treatment facility, serving a population of 90,000, was inaugurated by the President of Portugal, Marcelo Rebelo de Sousa, and is named as a national environmental benchmark for future developments.

Challenge

MBR treatment plants work without the addition of chemicals and with relatively low energy consumption, combining secondary and tertiary treatment and eliminating

traditional sand and carbon filtration. In order for the site to run safely and efficiently, penstocks and butterfly valves are required in order to facilitate flow control and eliminate the risk of flooding or overflow.

Solution

Profibus is a leading international digital communication system for process automation. It has been widely adopted for the automation of wastewater treatment plants around the world. Actuators and sensors can be controlled via a centralised controller, the Profibus DP.

Centralised process control and automation at Viseu Sul is facilitated using Profibus DP network technology, utilising Rotork's latest multi-turn and part-turn intelligent non-intrusive electric actuators (IQ and IQT respectively) to operate penstocks and butterfly valves for flow control throughout the wastewater treatment process.

The Rotork reputation for all-weather reliability in the global wastewater treatment industries, combined with the local availability of technical support from the manufacturer available from Rotork Iberia, also made important contributions to the selection of IQ actuation technology for this landmark project. In addition to being the most



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advanced WWTP in Portugal, the new Viseu Sul plant will enable the closure of other treatment plants in the area which do not meet the latest environmental regulations.

The Rotork Profibus DP module is compliant with the international open standard IEC61158/EN50170 and is fitted within the actuator electrical housing, allowing it to directly interact with the actuator electronics. All the normal commands associated with moving the actuator are available on the Profibus DP RS-485 highway, once it has been fitted. Additionally, historical data is available, providing valuable insights which have maintenance and efficiency-based applications.



Above: Profibus DP enabled Rotork non-intrusive IQ intelligent valve actuators installed at the Viseu Sul WWTP in Portugal, described as a national environmental benchmark for future developments.