
Grundfos provides wastewater pumps for integrated sewage system in Portugal

AVEIRO, PORTUGAL: Aveiro city is the capital of a region with unique geographical conditions due to the Ria – a spectacular lagoon situated on the Portuguese coast. The city is dependant on the sea, which is why the municipalities in the area decided to take action and started an integrated project to cope with the complex demands of dealing with domestic and industrial wastewater. And, with Grundfos as one of their suppliers, the project was well on its way.

The Situation

SIMRIA, created in 1997, is the multi municipal company responsible for developing this integrated project – collecting and treating wastewater of the entire Aveiro region with the newest techniques. Without SIMRIA, large quantities of wastewater would flow directly into Aveiro's Ria, and thereby causing severe environmental and social damages.

When finished, the system will have five wastewater treatment plants and more than 100 lifting stations, representing an investment of € 177 million. These facilities will treat the domestic wastewater of a population of more than a million inhabitants, but also the industrial wastewater of numerous heavy industries in Aveiro.

A prestigious project such as this one obviously attracts the attention of many international pump manufacturers – and initially it was no secret that SIMRIA had other favourites. Not being the preferred brand since the beginning of the project did not discouraged Grundfos that kept fighting hard to prove that its solution was the best, demonstrating its many benefits.

TOPIC:

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LOCATION:

Aveiro, Portugal

COMPANY:

Aveiro city

The Grundfos Solution

The decision to use Grundfos pumps was mainly due to a perfectly tailor-made solution and the capacity demonstrated by Grundfos to offer appropriate technical support and local after sales service.

Based on project specifications, Grundfos offered a customised solution where the lifting stations are connected in series through conduits with a considerable length and a low geodetic head. Since the majority of the lifting stations have three pumps (2+1), the total dynamic head might differ a lot when the pumps have parallel or isolated operation.

Grundfos also took the issue of pipe age into consideration. As pipes age, they become rougher and offer greater resistance, so the solution ensured a 10 % motor power safety margin over the higher absorbed power duty point. Consequently, several pumps were delivered with trimmed impellers and accompanied by a very comprehensive list of system curves and duty points.

For temperature monitoring, all pumps were supplied with winding protection. Pumps were also equipped with OCT 1 probes that measure the oil humidity. The readings of the probe are made by a relay (SARI 2) that allows measuring the isolation resistance of the electrical motors.

The Outcome

In the end, we had the perfect solution to match customer demands. By 2004 most of the lifting stations with Grundfos pumps were operating to everyone's complete satisfaction.