



AF

Projects Summary: Orthophosphoric acid dosing system



Project: Orthophosphoric acid dosing system
Client: Southern Water
Site: Newmarket B water supply works
Sector: Water

Project Summary

The scope of this project was for AFECO to design, manufacture, install, test and commission a complete orthophosphoric acid (Ortho P) chemical dosing system at Newmarket B WSW. The system was sized to supply OrthoP into the DMA for other linked sites. The full scope of AFECO's contract included:

- Principal Designer under CDM, responsible for detailed design of the complete works
- Principal Contractor under CDM, responsible for all site set up and safety, site and subcontractor management, installation, testing, commissioning, training and paperwork
- Relocation of the chemical dosing point which required the design of a new chamber, buried dosing lines and static mixer
- Removal of all redundant existing equipment
- Supply installation and testing of all equipment, including dosing pumps, dual contained chemical storage tank and pipework, dosing kiosk, dosing MCC and PLC, monitoring system, bunded area with encapsulated valve and safety shower
- Integration with existing site control and telemetry
- Commissioning including chlorination, training

Overview

Southern Water Services Limited (SW) is a private utility company, responsible for providing drinking water and wastewater services across the South East of the UK. SW supply drinking water to approximately 1 million households from 83 water treatment works as well as being responsible for the collection and treatment of 718 million litres of wastewater at 365 treatment works through a network of 2,375 pumping stations.

Newmarket B water supply works (WSW) is a water treatment site in East Sussex that treats water to potable standard before pumping it into a DMA to serve the Brighton population. The driver for this project was to reduce plumb solvency in the area by installing a new chemical dosing system. This project was delivered as part of the Optimisation Partner Framework, set up to deliver benefits through innovation and optimisation.

Services Provided

Our responsibilities included the provision of detailed engineering design and installation services, including:

Engineering design

We undertook all elements of the project design, from defining the control philosophy of the system through to detailed mechanical, electrical and ICA design, including the design and manufacture of the MCC and selection of the most appropriate equipment to align with the clients' specifications and performance criteria

CAD drawings

We produced detailed drawings for the construction of the project and on completion as As-Built's, using AutoCAD, including P&ID's, general arrangement and electrical drawings

Project and programme management

We were responsible for all elements of the project, including programme preparation and updating, risk and project management, regular reporting to the Client, site progress and sub-contractor review meetings

Site management

As Principal Contractor under CDM 2015, we directly managed all site activities, including site set-up, preparation and maintenance of the Construction Phase SHE Plan and other safety requirements, as well as directly managing all works and sub-contractors

Construction and installation

We carried out all M&E installation and civil works required for this project including new chamber excavation and construction, temporary works, plinths, pipework, trenching, ducting and containment and equipment installation

Commissioning and testing

Prior to delivery to site, we undertook Factory Acceptance Testing (FAT) of the chemical dosing system and MCC as well as on site testing and commissioning before successfully completing performance testing with regular Client commissioning meetings

Operator training

To complete the Contract, we prepared a Training Programme and Manual, delivering on-site training for the Operational team

Key Services Provided

Mechanical engineering and design

Electrical and ICA engineering and design

Principal Contractor under CDM 2015

Site management, installation and commissioning

Integration and operator training

About us

AFECO is a dynamic, specialist engineering services provider focussed on servicing our clients immediate and future needs.

Specialising in the water and marine sectors, our comprehensive range of professional services, solutions and products enable us to provide our clients with a complete and integrated project delivery and support service, whether providing expert advice or a complete design, installation, commissioning and optimisation service.

We operate under the control of our ISO9001, ISO14001 and ISO45001 UKAS accredited management systems, reflecting our commitment to consistently provide the highest standards safely every time.

To find out more about us visit our website at www.afeco.co.uk, contact us at info@afeco.co.uk or talk to one of our team on +44(0) 2392 267322.