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Projects Summary: Pumping station refurbishment



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.

In 2022 SW instigated a programme of works to conduct extensive surveys on their historically worse performing pumping stations, to identify the remedial works required to increase the resilience of these stations and hence reduce the pollution risk and to implement those remedial works. AFECO conducted full intrusive platinum health checks on over 180 pumping stations and carried out a full suite of remedial and rebuild works on 43 of these stations.

Project: Pumping station refurbishment
Client: Southern Water
Site: Multiple sites
Sector: Water

Project Summary

The scope of this project included the surveying, scoping, remedial and refurbishment works, commissioning and testing of over 40 wastewater pumping stations across the SW region. The AFECO full scope of supply included:

- Full intrusive survey of over 180 pumping stations to assess condition and performance of assets and validate against Permit and technical standards, including detailed reports and recommendations for remedial works to reduce the failure risk
- Scoping and design of refurbishment works at over 40 pumping stations
- Design of complete re-builds where required including HAZOP and ALM reviews
- Works included new wet wells, pumps and pipework arrangements, control, telemetry, end-to-end testing, CSO screening, generators and MCCs as well as new site documentation
- Installation of remedial works including all mechanical, electrical and ICA works, and testing required to meet the agreed scope
- Commissioning and Asset Integration for each pumping station including full manuals

Services Provided

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

Site surveys

We undertook detailed surveys of each of the 180 pumping stations including mechanical, electrical, ICA and process checks of all assets and permit performance

Engineering design

We undertook all elements of the design of new equipment and full pumping station rebuilds as required, 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 new equipment and plant, as well as producing new P&ID's for watch of the sites using AutoCAD

Project and programme management

We were responsible for all elements of the project, including programme preparation, project management and regular reporting to the Client

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 MEICA and civil works required for this project including new wet wells, temporary works, pumps, instrumentation, containment, pipework, DNO relocation, MCCs and kiosks and all equipment installation and connections

Commissioning and testing

We conducted FAT testing of new MCCs as well as the testing and commissioning of all new plant, 14-day reliability testing and Asset Integration of all new equipment

Key Services Provided

Process and MEICA surveys

Electrical and ICA engineering and installation

Mechanical engineering and installation

Principal Contractor under CDM 2015

Site management, installation and commissioning

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. Follow us to keep up to date: