CASE STUDY

Dublin Port Fire Main Booster Pumps

Process Description & Equipment Supplied

Dublin Port required a new dedicated pump system to deliver fire fighting water at the Dublin Port facility. The pumps were designed to ensure the fire fighting main was pressurised with sea water to 10 bar and to deliver flow rates of approximately 800 lps. DPS was responsible for the supply, installation and commissioning of 5 no. Vertical Turbine Bowl Pumps (WIMES 1.16) to act as the booster set and a single KSB UPA submersible multistage pump (WIMES) to act as the jockey pump for the system. DPS also supported with the design feasibility and scope at an early stage pre-tender.

DPS was subsequently involved from the initial tender stage, working with the consultant engineers for the project, Jacobs, to develop a detailed specification for the pumps, station layout and control philosophy for the system. This relationship was key to ensuring a coherent solution that would allow the site to be optimised for both efficiency and ease of access for future maintenance in order to drive down Whole Life Cycle Costs.

Project Overview

Client Name

Dublin Port Company

Completion Date

January 2014

Wimes Compliant Project:

January 2014

Reference Contact

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Value of Project

£70,000

Fluid Thinking

DPS was responsible for the Civil contractor as well as installation of the pumping equipment on site. To ensure installation to OEM specification, our Particular details to be considered during the course of the design were the materials of construction for the pumps to suit sea water with the mechanical seals being of particular concern. Options considered for the mechanical seals included diamond faced to provide the required hardness but ultimately hard faced silicon carbide were selected with a bespoke quench system designed to flush the seals. The seal quenching system required its own separate pumping system installed on site to deliver flushing water at an adequate flow rate.

With regard to the hydraulic selection, DPS ensured that the pumps selected were operational no matter what the tidal level was in the port area. This meant due consideration had to be given to the performance of the pumps when the water level would be at its lowest, 'Astronomical Low Tide', while ensuring that the motors could handle the flow rates without overloading when the tide was at its highest and the pump head at its lowest.

Process for managing relationship with our customers delivery team

Having progressed from working with the design team to the supply and installation phase DPS nominated a Project Manager who would be the point of contact for Dublin Port, Jacobs and all other contractors on the project. The Project Manager was responsible for all communications between DPS and the project stakeholders.

The Project Manager was responsible for Daily Progress monitoring and reporting. The Project Manager was also responsible for the Weekly Review Meetings which, in addition to monitoring the schedule, covered issues such as Health and Safety, Quality and Risks. The outputs of the Daily and Monthly Meetings were subsequently communicated to the DPS installation team and the OEM as required. The Project Manager was responsible for amending and implementing any changes required to the DPS Health & Safety or quality procedures while amending the delivery and installation schedule as necessary to ensure compliance with the Delivery Team requirements.

Process for handling over 'fit for purpose' equipment free from defect

Prior to supply DPS participated in a Factory Witness Test along with representatives of the key stakeholders in the project. This confirmed that the pumps were capable of attaining the performance level required prior to installation.

Having installed and commissioned the equipment on site as per the OEM requirements and in conjunction with the project stake holders, DPS then 'snagged' the site prior to handover to ensure there were no minor issues outstanding. To ensure the site was trouble free prior to handover, DPS carried out a series of post commissioning checks at three months and finally six month intervals post commissioning and the initial handover phase.