CASE STUDY

The Generator Company Generator System Installation at Europe's Busiest Ferry Port

With the huge redevelopment of Europe's Busiest Ferry Port which provides a vital International logistical gateway for passengers and trade, the upgrade of the site's back-up generator system was scheduled into the overall Port improvements.

To meet the demands of the Ports modernisation and advances in technology throughout their vast array of operating systems which keep the Port running and open for business 24 hours their current back-up generator system needed renewing.

Having had a great working relationship with this Kent Ferry Port The Generator Company were keen to tender for the new installation.

Client

Europe's Busiest Ferry Port

Project Specifications

Removal of 3 generators and the installation of a new generator system and control panel with 'STOR' application and increased back-up power.

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And, having worked with them since 2010 our Engineers and Managers have an in-depth knowledge of the exact specification of the Ports current system which they wanted to replace together with a good understanding of their required power utilisation during operation hours, including peak power loads.

The Generator Company as well as two other companies were asked to tender for the generator system upgrade in the central, front road and mooring party sub stations. In brief, the requirement was to step up the generator power from 5MW up to 6.5MW and to ensure all new generators could provide power for a 'STOR' application and in particular benefit from Triad tariffs. This enables the generators to provide additional power that can be utilised for the National grid when required and in return getting paid for having power available and then for any Power actually used. This would allow the National grid to turn on the generators and take the stored electricity during peak surges within the local area. Selling this electricity back to the grid is incredibly cost effective for the Port as well as helping their environmental credentials by reducing the UK's carbon footprint.

Following the submission of our tender by our Sales Manager and proposed Project Manager, we were pleased to be invited to liaise with the Port's Electrical Engineer to discuss the new generator system design and specification in more detail to successfully win the project.

Prior to the new generator system being installed at the required locations a great deal of preplanning was necessary for the removal of the old generators. There were three separate locations for the removal of the old generators and installation of the new sets and associated equipment. There was also a great focus on the deadline for completion in time for the benefits from the "STOR" application and higher premium Triad tariffs that are available towards the end of the year.

With accessibility to all current equipment together with the temporary back-up generator in place our Engineers disconnected all relevant pipework, fuel lines, exhausts and cabling. Once everything from the old set-up had been disconnected all the old equipment that was no longer required in the new system setup was then removed and disposed of accordingly.

Our Engineers dropped each new bespoke generator off using our own in house transport and lift and shift capability HIAB and then carefully skated them into the desired locations, along with the new changeover panels, fuel tanks [where applicable] stainless steel exhaust flues, silencers, pipework and cabling.

With all the new equipment in the specified positions our Engineers embarked on all M&E installation works and the final connections for completion which included a canvas connection between generator and weather louvre, new double skinned fuel pipe from existing day tank to generator, a fire drop valve and fusible link and tilt switch, a new silencer above the new generator and stainless steel exhaust flue from the new generator, which exhausted out of the front of the building.

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Finally, the LV power and control cables were installed between the generator, new generator control panel and new changeover panel. Once all the new equipment was connected up new double doors were replaced at all locations as well as new weather louvres and a new wall was re-built at the Central substation.

On completion of the new back-up generator system upgrade, as per the original design drawings and specifications agreed and signed off with the client, commissioning of the three new systems was able to go-ahead. On completion of commissioning a mains failure test was undertaken at each substation whilst the client was present. Our engineer also performed resistive loadbank tests on the generator systems at different load capacities for differing durations to prove the systems operational performance. Automated system start-up was verified as were all the relevant safety features and control mechanisms. Visual inspections were carried out while each system was operational as well as ensuring all auxiliary equipment was working as detailed. All information was documented and given to the client.

In addition to the successful commissioning of each generator system within all of the three substations the scope of our works was to design and engineer a control system that would also be able to connect together all 3 systems as one power source in order to maximise the available power for the 'STOR' requirements. This system also needed to be remotely controlled from the sites central control centre for power distribution across the Port which required careful reconfiguration of the sites telemetry system.

On successful completion of the new back-up generator systems and after successful testing and demonstration of the combined control for "STOR" applications, The Generator Company left site to the satisfaction of the client and would return each year, as they have over the last 6 years, to complete the yearly service of the new system following the renewal of their service and maintenance contract.

Generator: System Design Supply Install Hire Service Maintenance

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