shentongroup Completes Large Scale Continuous Power Project for Liverpool Telecoms Company

Location: Oxfordshire
Products and Services Supplied: Standby Generators | Uninterruptible Power Supply (UPS) Systems | HV & LV Switchgear | AMF Psanels

Overview

A major Liverpool-based telecoms company required a major upgrade to the continuous power supply system at its communication's centre covering the whole of the North of England. Two years in the planning, the project involved shenton**group** initially supplying rental generators whilst the company's three existing Diesel Rotary UPS (DRUPS) systems and supporting infrastructure were removed. shenton**group** then provided three large 2000kVA generators, an Uninterruptible Power Supply System and AMF Panels, as well as upgrading the customer's Air Circuit Breakers and installing a new LV Switch Panel, and upgrading all mechanical Changeover Panels.

The Problem

Being a larger-scale project, the sheer magnitude of this multi-million pound work required, not only maintenance of the client's continuous power supplies throughout the entire project, but it required military-precision planning and subsequent execution.

The project entailed upgrading the telecom company's existing standby power infrastructure to provide the communication facility with a total of 6MVA of standby power.

Two dated, large and now insufficient Diesel Rotary UPS (DRUPS) systems needed to be replaced and the entire continuous power supply infrastructure needed replacing and upgrading with minimal interference to the smooth-running of company operations. Therefore, this large, complex project needed to be carried out without disruption to the company's complex electrical infrastructure and communications systems.

> ***"The project entailed upgrading the telecom company's existing standby power infrastructure"***

Solution

Taking two years of planning and execution, the major project was awarded to shenton**group** based on its previous experience with the telecoms giant. shenton**group**'s Sales and Marketing Director, Curtis Meek elaborated: "Due to the size and complexity of the project, shenton**group** put together a team of 50 personnel involving the company's rental, sales and engineering departments. Working closely with the telecom company's consultant, through fortnightly meetings, an initial specification was drawn up which expanded as the project grew".

The first phase of the project saw shenton**group** removing three superseded Diesel Rotary UPS (DRUPS) systems, together with choke units, panels, pipework and a 72,000 litre underground fuel tank. These items required craning out of the ground with the removal taking four weeks to complete.

To ensure continuity of power during the project, shenton**group** supplied six 1250kVA hire generators in three separate locations around the site as N+1, with fuel tanks to support the site whilst the work was carried out. Two of the generators were supplied on trailers, which have now been sold to the telecoms company for its hire fleet. Temporary offices were also erected to provide shenton**group** with an on-site facility from which to manage the project.

In order to install the three large 2000kVA generators, major groundwork was required. This necessitated the building of a steel construction frame for the generators and fuel tanks, the installation of 30,000 litre fuel tanks for each generator, as well as extensive cabling work. Cabling was a complex part of the project that required personnel to undertake confined space training. It involved creating cabling trenches to carry cables for the switch panels and the installation of sump pumps and double-skinned diesel fuel pipework. A feeder pillar was also installed for the temporary generators and will remain in situ, should it be required in the future.

shenton**group**'s Curtis Meek detailed the length and depth of planning that shenton**group** undertook to ensure that this large project materialised with minimal risks and problems: "Prior to the three 2000kVA generators being transported by low-loader to the site, shenton**group** undertook witness testing at its Andover headquarters. Following the temporary removal of a number of fences on the site, the generators were then craned into position". Curtis added: "These have been equipped with stairs and gangways to allow engineering access, as well as stainless steel exhaust systems and fire and security systems. Now fully operational, they support three incoming mains supplies and can synchronise with each of the mains power supplies".

Further project work involved upgrading the site's 30 Air Circuit Breakers (ACBs), installing a new LV Switch Panel and upgrading all mechanical Changeover Panels. shenton**group** also installed the new Control System, which allows synchronisation with the local Distribution Network Operator (DNO). This required the complete re-wiring of each LV Panel and included the installation of an HMI screen which displays the site's entire electrical infrastructure within the Building Management System (BMS).

To complete the project, shenton**group** undertook complex Integrated System Testing. This saw the temporary installation of Auto Mains Failure (AMF) panels and load banks to simulate different power failure scenarios, to test the ability of the loads to switch to alternative generators.

Outcomes

This meticulously-planned project was professionally planned and executed throughout. shenton**group** Project Manager, Kenny Matley, confirmed this: "This was a complex project that required very detailed planning and close liaison with the company's Consultant. The customer is delighted with all aspects of the project which was completed on time and on budget".

The client now possesses a very capable and integrated continuous power supply system that will protect it's North of England operations well into the future. As the National Grid confirms some of its lowest reserve power supplies in many years, the client is now future-proof from potential power-cuts and, thanks to it's integrated Uninterruptible Power Supply system, the entire North of England centre will be instantaneously self-powered in the event of mains power failure, something that can be continuously monitored via the site's HMI screen within the Building Management System (BMS).

About shentongroup

shenton**group** is the UK's leading technical expert in standby power, uninterruptible power supplies, and combined heat and power supplies. The company provides power solutions to organisations spanning a broad array of industries that rely on continuous power supplies and includes; finance, telecoms, healthcare, manufacturing, retail, education, government, utilities, sport and leisure, and of course, IT.

shenton**group**'s standby generator range includes single and three phase generator solutions, ranging from 10kVA to 3.2MVA. Being all British built and to the highest quality and safety standards, shentongroup generators are ideal for use as prime power or standby power supply usage. All shentongroup diesel generators include; a full range of weatherproof canopies to meet sound attenuation levels; proven industry-leading control systems and switchgear hardware; integral bunded base-frame fuel tanks and fuel management systems; containerised modular solutions; custom built drop-over acoustic canopies; and skid-mounted 'open' sets for specific applications.

shenton**group** Uninterruptible Power Supply (UPS) Systems, complete with Automatic Mains Failure (AMF) Panels, also referred to as Automatic Transfer (ATS) Boards, monitor the incoming AC mains supply and with no break in power, activate the standby generator when mains power fails. When the mains supply returns, the AMF Panel controls a return to the mains supply and shifts down the generator after a suitable cooling run.

For installation, replacement and regular maintenance and servicing of High and Low Voltage Switchgear and Air Circuit Breakers, shentongroup has a nationwide team of engineers trained to provide ongoing and scheduled maintenance on all makes and sizes of switchgear and ACB's. Annual or one-off service visits on all types of HV/LV switchgear can be carried out within normal working hours, or out of hours on the following equipment; LV Switchgear; Many manufacturers of ACB's; HV Switches; HV Transformers. shenton**group**'s service and inspections would typically include; Visual inspection; Cleaning; Lubrication; Busbar Integrity; Insulation safety; Full 'current injection' testing and calibration.

To find out more about your standby power options, contact the shenton**group** technical team on 0844 888 444 5 or request a site survey at www.shenton**groups**.co.uk.

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