

Automated Generator Control Solution for Fish Farm Aeration System

Client: VS Fisheries

Location: West Sussex

Products and Services Supplied: MF Panels | Power Systems

Overview

VS Fisheries, a large carp farming operation, required a solution to the manual process of starting their existing 30kVA generator which powers a series of aerators in on-growing ponds. shentongroup provided an automated Control Panel solution which now brings the backup power system on-line in an automated, sequential manner.

The Problem

VS Fisheries features eight large carp 'on-growing' ponds, located one mile away from a main farmhouse, set in the heart of the West Sussex countryside. The ponds required the use of an existing 30kVA generator to supply power to aeration equipment, but the 5 year-old unit had to be manually started with a key and the aerators for each of the eight fish ponds had to be turned on by a number of switches, so as not to overload the generator.

Seeking a more straightforward solution, fish farmer Simon Scott contacted shentongroup for help after being referred by another farm in Scotland.

Simon explained the scenario: "The carp farm spawns and then on-grows carp which are ultimately supplied to commercial fisheries and angling clubs. The ponds need aerating to allow us to hold more fish in each pond and to feed the carp more intensively, which improves their growth". Simon continued: "As this group of ponds is over 800metres away from a mains power supply, the best option to power the systems was a generator. Aeration is like a life support system for the fish. Oxygen is only usually an issue in ponds overnight, but as the start-up process is manual, the aerators usually ran from 10pm until 7am in the morning. This was much more aeration than was actually needed, which is why the new control system was required".

Solution

shentongroup Director, Darren Meek, details how his company set about providing VS Fisheries with an ideal solution: "After the initial meeting to evaluate the client's requirements, it was clear that the cost of a new, larger generator was outside of the project budget and the existing generator had to be retained. The solution was a new fully automated Control Panel, fitted with a Deepsea Control Module, Timers and Relays".

The Control Panel had a built in timer which was used 24/7, requiring charging to maintain the DC voltage to the battery. Darren Meek explained shentongroup's innovative solution to this problem: "A solar panel was designed into the system and this maintains the DC power to the control system".

Each of VS Fisheries' 8 lake uses around 2kw of power once running, but initial impact load of starting the lakes would overload the system and cause the generator to fail if all lakes were started at once. Without changing the



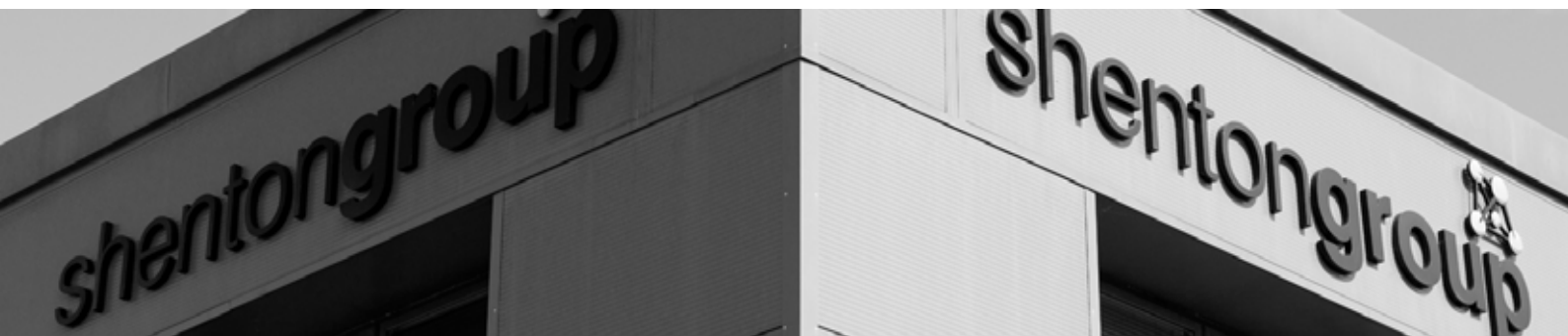
 Power Systems

"Aeration is like a life support system for the fish"

generator, the only alternative is to start the lakes one at a time. To achieve this, shentongroup designed a sequential starter panel into the system which provides power sequentially to each lake, allowing the generator to recover after each load step.

As well as the the new control system, new cabling was also installed in SWA cable from the new Control Panel to each of the lakes, with new double socket outlets provided for the aerators in the requested locations.

shentongroups Darren Meek detailed the final part of the solution: "As the farm house is over a mile away, there was little point in moving to a fully-automated system if the farmer still had to go over to the lakes to check the generator was operational. To overcome this, a flashing beacon was installed on top of the generator which can now be seen from the farmhouse. At the designated time, Simon can see if the generator has powered up as expected".





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Outcomes

“I’m really pleased with the new system from shentong**group**”, said Simon Scott. “It helps us farm the fish more efficiently and gives me peace of mind that the system will perform at the required times”, he added.

“We also use the aerators for an hour when the fish are fed in the morning, between 9-10am, which encourages them to feed well. With the new control system we now only run the aerators overnight between 11pm and 4am. This saves us around 25-30% in diesel. It also means that we don’t have to send someone down to the farm twice a day to turn the system on and off”, concluded Simon.

About shentong**group**

shentong**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, IT, healthcare, manufacturing, retail, education, government, utilities, and sport and leisure.

shentong**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.

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

About VS Fisheries

VS Fisheries provides the highest quality English farm-bred carp for specimen fisheries. The company endeavours to produce fish with individual character and great future potential so that clients can deliver carp that are ‘simply stunning’.



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