MANUFACTURER OF MECHANICAL SEALS AND SUPPORT SYSTEMS ENHANCES SUPPLY RESILIENCE AND STORAGE

VIRTUE
ENERGY STORAGE SOLUTIONS

Client:

A specialist manufacturer of mechanical seals

Application:

Power resilience

Location:

Yorkshire, UK

Technology:

500kW/500kWh battery energy storage

Full UPS capabilities

Project Date:

2019

CHALLENGE

One of the world's leading specialists in the design and manufacture of mechanical seals and support systems was suffering from power failures.

The client's products are utilised in a vast range of pumps and rotating equipment worldwide to prevent liquids and gases escaping into the environment. Due to their critical application, the client placed utmost importance on its products being produced to the highest and most stringent quality standards, which relies on the manufacturing processes operating without interruption.

SOLUTION

After a thorough site survey and analysis of the site requirements, Powerstar recommended the installation of a 500kW/500kWh Virtue Battery Energy Storage System (BESS) with seamless Uninterruptible Power Supply (UPS) capabilities.

In the case of a power failure, the full UPS capabilities of Powerstar VIRTUE can support the connected load within milliseconds without causing any interruption to the on-site equipment. The ability to protect the site against costly power failures interrupting critical business operations will enable it to continue delivering the highest quality components to its customer's, protecting its reputation as well as minimising financial risk.

RESULTS

The Powerstar VIRTUE system, installed in 2019, is providing full UPS capabilities, increasing power resilience of the site and negating costly interruptions. Additionally, the system is being optimised to produce cost savings during peak tariff periods as well as generating revenue through grid contracts.

Examples of the system supporting the site during multiple power failures can be seen overleaf.

MANUFACTURER OF MECHANICAL SEALS AND SUPPORT SYSTEMS ENHANCES SUPPLY RESILIENCE AND STORAGE

VIRTUE
ENERGY STORAGE SOLUTIONS

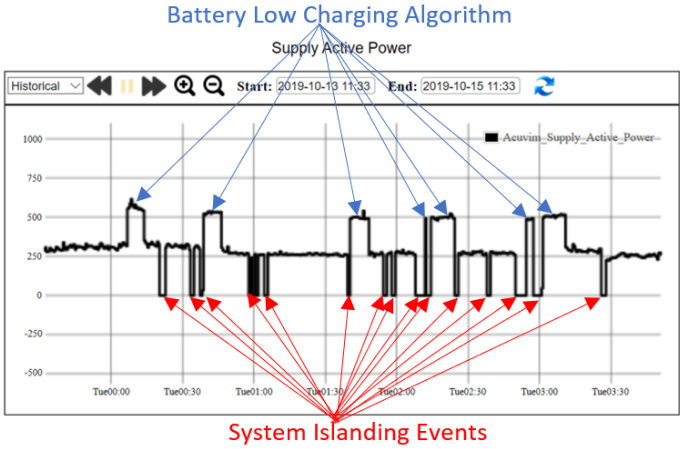
ANALYSIS OF IMPACT

The graphs below illustrate that when the supply active power dropped, during multiple short term power quality issues, the load power was not interrupted as the Powerstar VIRTUE system supported the site.

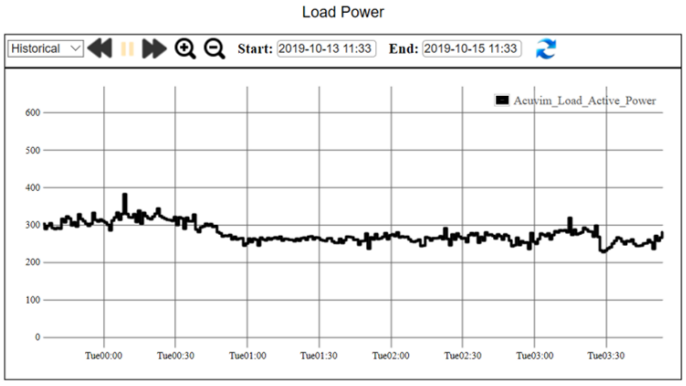
COMMENTARY:

- The normal State of Charge (SoC) range of the unit is 20% - 90%. This means that it cannot go above or below this range during normal operation. However, critical events (UPS support) can go to 1% SoC to avoid a loss of power.
- When the system drops below 20% SoC, the Powerstar energy optimisation system takes control. As long as the Grid is present, it charges the batteries until they reach 25% SoC creating an event referred to as “battery low charging algorithm”.
- The number of ‘system islanding events’ in a 3 hour period shown below illustrates that there were multiple short term power quality issues across the evening generated from the Grid.
- All the events lasted durations which were under 5 minutes, therefore are not required to be reported as an outage, even though on-site equipment would experience interruption.
- The load power chart shows that despite fluctuations on the supply active power, the load did not experience any interruption.

Supply Active Power



Load Power



www.powerstar.com/virtue

ENERGY STORAGE SOLUTIONS FROM powerstar

WANT TO PROTECT YOUR SITE WITH POWER RESILIENCE? CONTACT US AT **virtue@powerstar.com**