Case Study

Technology Applications

"..[Falcon's] UPSs take quite a beating; however they work flawlessly – unlike other electronic equipment that can't operate in harsh environments."

– Brad Guidry, Assistant Store Manager and Safety Coordinator, Allis-Chalmers Tubular Services

Falcon Electric, Inc.
5106 Azusa Canyon Rd.
Irwindale, CA 91706

800-842-6940
www.falconups.com

Falcon's Isolated UPS Solves Oil Company's Difficult Power Quality Problems

Oil services company, Allis-Chalmers Energy, Inc., knows first-hand the time and financial ramifications of not having clean, uninterrupted power. With oil demand and costs at all-time highs, Allis-Chalmers prides itself on delivering the highest-level of drilling equipment and services to natural gas exploration and production companies nationwide on-time and within budget. Due to the inherent nature of oil drilling, all equipment must be able to operate in extremely harsh conditions and that includes equipment that is powering the various oil extraction machines. If these machines do not receive clean, continuous power, operations can come to a costly halt. Through experience, Allis-Chalmers Tubular Services found out that not all power protection systems are created equal.

One of the most important tools that Allis-Chalmers uses in oil extraction and exploration is an automated hydraulic tubular make-up or break-out system known as a tong machine. The tong machine handles the important task of coupling the tubing (the pipe through which the oil flows) and regulates the rotation of the tube-connecting process. This is a delicate and exacting process requiring carefully regulated torque. To achieve this, the tong machine's computer ensures that the machine's hydraulics stop rotating when the proper pressure to the tubing connection has been achieved. In this sense, the tong machine is similar to a torque wrench: it knows when the proper tightness has been reached. This precise torque is imperative for proper connection. Too much torque and the connection threads can be stripped or the tube itself can break.

The automated hydraulic tong machine operates in a very harsh environment, especially when operating on-shore, which is typically in a remote area without available AC power. In these cases, a generator is located inside an on-site vehicle to provide electricity. "The power coming from the generator is very polluted – full of spikes, noise and surges," said Brad Guidry, assistant store manager and safety coordinator for Allis-Chalmers Tubular Services in Louisiana. "This unstable power leads to a significant amount of downtime. 'The 'dirty' power from the generator would send power surges and spikes through to the tong machine's computer and destroy the circuit boards and internal power supply. When this happened, we had to shut down the tong machine for the day and wait until we received another computer from the supplier. This would disrupt operations and bring production to a screeching halt. In the drilling business, time is money and this cost the customer thousands of dollars.

We researched the problem, and concluded that a power conditioning unit was needed in order to catch the surges and other power problems before they reached the computer. We bought and installed a traditional power conditioner – a transformer-based unit that most popular power protection vendors offer. We picked one that we thought would do the job. We plugged that unit in and though we thought we solved the problem the result was – to our dismay – another blown computer."

"Finally one of our team members told us about Falcon's UPSs. We found that Falcon, located in Southern California, has a distributor next door in Plano, Texas. Phil Eddelman, owner of Digital Environmental Solutions, talked to us about the load, operating location and conditions, and other requirements such as the back-up time we needed."

"Phil was very knowledgeable about the Falcon UPS line and he suggested we install a SSG-500VA-1 On-Line UPS. He explained that in contrast to the transformer-based power conditioner, which did little more than pass the unstable, polluted power through to the tong machine, the SSG™ unit is a double-conversion UPS with galvanic isolation. This feature allows it to regenerate a pure power source (sinewave), which acts like a firewall between the computer and the generator. Since it includes isolation, the UPS is also able to shield the tong machine's computer from noise and harmonics as well. Due to its advanced features, the SSG500 unit costs more than the power line conditioner, but I convinced my boss the money spent was well worth it if we solved our problem."

"Since we installed the SSG500s we haven't experienced any downtime related to power surges or spikes. In fact, these UPSs work so well that we don't worry about the quality of the power, whether we are on or off shore. As you can imagine, we operate in all kinds of challenging locations and the UPSs take quite a beating; however, they work flawlessly – unlike other electronic equipment that can't operate in harsh environments."

"After many years of duty, one of the SSG500s recently had to be replaced and that gave me an opportunity to talk to the people at Falcon Electric. Like Phil, I found the Falcon representative very knowledgeable about the product, which I found refreshing. Knowing how much downtime they saved us, I will continue to buy Falcon Electric's products. The investment in Falcon's SSG500 UPSs is one of the best that Allis-Chalmers has made and we will continue to use and recommend them to our customers."