



CASE STUDY

Smart Relay Creates Safety and Efficiency Boom

How an oil & gas company reduced troubleshooting calls by 50% while improving worker safety

SITUATION

A large oil and gas exploration and production company made what is expected to be one of the biggest oil and gas discoveries of the decade. The discovery was made in the Permian region's western part of Texas and is one of the company's core growth areas. This West Texas discovery site holds an estimated 3 billion barrels of oil and 75 trillion cubic feet of natural gas.

Operational equipment working to extract valuable resources needs reliable components and processes to make every second productive. The company began evaluating several brands of protection relays to protect their investments in pumps and motors, optimize productivity, and improve safety. After the company's engineers tried the Littelfuse Bluetooth® Overload Relay, MP8000, the company stopped its search and installed MP8000s across the oil-and-gas rich region.

"MP8000 is going to save us a lot of time"

THE CHALLENGES

An oil and gas exploration company operating in West Texas is familiar with their systems going down due to electrical system issues, its remote location and loss of productivity that typical relays fail to prevent. In West Texas, voltage and phase issues can be incredibly problematic. The area is remote, so the system load side is not constant and can result in fluctuating voltage that can cause motors to overheat and fail. When the number of pumps in the area's operation varies, the load on the utility changes, which causes major voltage swings. If the voltage swings too low or high, then the motor will overheat and insulation will start to burn up faster than what was expected.

The company was using two components for motor protection prior to the MP8000: a thermal overload and a voltage monitor. While the engineers were aware of the pumps going down, they were in the dark about the frequency, exact cause, and time of each occurrence.

In the past, contractors had to troubleshoot the pump using clamp-on amp meters. It was not uncommon for them to travel to the site to test the pumping equipment, only to learn that there were no issues. The MP8000's trip/fault history feature, however, has changed all of that.



THE SOLUTION

The company's engineers tested products from many manufacturers. The other relays "had nowhere near the protection that the Littelfuse [MP8000] has," one of the company's engineers said. "The Littelfuse relay was the first motor protection device they gave us to try out that had both voltage monitoring and overload protection in one, single device," he said. "We used to have to use different devices for overload protection and phase protection and now we don't."



MP8000 Series

After the MP8000s were installed, the company reported a 50 percent reduction in the number of calls claiming that the pump equipment was down. "The relay's real-time data eliminated the need for assumptions about whether the equipment is functioning," another one of the company's engineers said.

The relay's trip/fault history has changed the number of reports because the details surrounding the "what" and "why" are tracked through MP8000, the engineer said. This eliminates any assumptions as to whether the equipment is actually functioning. "There is more accountability," he said.

"The relay's biggest benefit," the first engineer said, "is that [MP8000] has ethernet and allows us to plug into it from our office and see everything in the field. This has also really helped us in terms of safety because we don't have to open the panels as much," he said. "Anytime you open the panels, you open the doors to an arc-flash hazard."

"But now," the engineer said, "we are able to look through it via Bluetooth® or from our computers," he said. "We can see if there is an actual issue, what the issue is, and what we need to adjust before sending someone to the site."

Password protection, which allows for more control over who can adjust the MP8000's settings, is another key feature, the engineer added.

"The relay took about 30 minutes to an hour—not long—to install and set up to be operational," he said.

When it comes to efficiency, both engineers agreed: the MP8000 saves time. "MP8000 is going to save us a lot of time down the road because it keeps a fault history and tells us what problems there have been and how they can be resolved," the second engineer said. "By providing the history with timestamps and eliminating the need to put on PPE and open the panel, the time to troubleshoot and make repairs is drastically reduced."

The fault history, he said, means less time is required for troubleshooting. You just need to look at the data retrieved from the device to identify the trip/fault conditions. He added, "It is more efficient."