

Detection is better than cure

Infrared cameras allow technicians to detect electrical and infrastructural problems before they cause equipment to fail. **TI Thermal Imaging Ltd's** Richard Wallace tells Rod James how regular thermographic monitoring can improve process efficiency and save money.

From extraction to transportation, the oil and gas process chain is dependent on a host of electrical and mechanical systems, flow lines, turbines and pressure vessels. The failure of even the smallest component can result in at best a loss of production, at worst a serious safety breach. According to Richard Wallace, managing director of TI Thermal Imaging Ltd, the best non-intrusive, non-invasive and non-destructive tool for monitoring these components is a thermographic camera.

All objects above -273°C, or 0 Kelvin (absolute zero), emit infrared energy and a fault in, for example, a piece of electrical equipment will manifest itself as heat. By monitoring the level of heat emitted, infrared cameras can identify a fault, such as a loose or faulty breaker connection, before it causes a piece of equipment to malfunction.

"Our cameras offer temperature measurements within the images they take," Wallace explains. "We run high-end, large-format thermographic cameras that offer 640x480 resolution – the best commercially available specification."

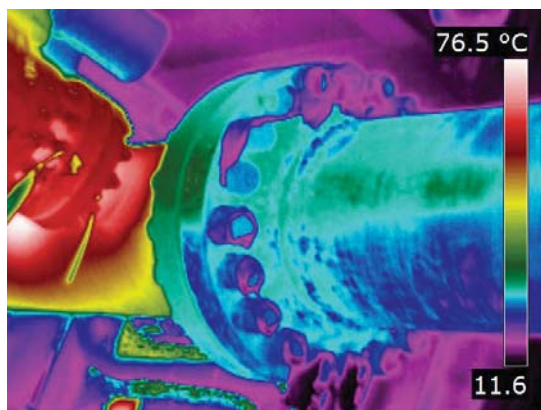
As well as carrying out thorough electrical and switchgear inspections using a pioneering web-based platform, the company can apply thermographic technology to numerous oil- and gas-related processes. Such techniques can be used to, among other things, examine pipeline integrity, check the insulating qualities of LPG/LNG holding tanks, and monitor the build-up of potentially corrosive sand in crude oil tanks, pipes and valves.

"For example, if we take an image of a separator vessel we can measure from its base upward to where the level of the sand is," Wallace explains. "Because we know the resolution of the camera and its distance from the separator, we can calculate in centimetres or metres the height of the sand level. It's very powerful technology."

Long-term observation, immediate reaction

In Wallace's view, one of the company's major strengths is its ability to monitor long-term changes in the condition of an asset. Its software system lets a customer compare and contrast images from separate scans taken over an extended time period. This helps them to track the rate that their electrical and mechanical systems deteriorate and react accordingly.

"We run a bespoke software system that allows us to image everything that we look at and it gives us the ability to offer



A fault in the pipeline shows up as heat on the infrared cameras.

trending temperatures between the two inspections," he explains. "For example, if you do five inspections over five years, we will have a record of when we began to monitor that piece of equipment, giving a visual idea of the changes that have taken place between inspections."

The software is web-based, meaning that it is remotely accessible and does not require the customer to download the software. It is particularly useful

for companies with many assets, as it allows a customer to monitor them all through a single portal.

"A customer may have seven critical, 12 serious, and 30 important problems," Wallace says. "We allow them to see all this information on one page. They can drill down into that asset and deal with the problem from there."

Promising future

Looking ahead, Wallace sees his company consolidating its strengths. TI Thermal Imaging Ltd focuses solely on thermographics, furnishing it with the expertise to react quickly to customer requests and giving it licence to invest heavily in the best technology. These capabilities, combined with an office infrastructure, give the company a scope that many of its rivals lack.

"At the moment, we believe we are ahead of the competition," he explains. "We are always trying to offer the customer the best kit possible: the best cameras, the best software and the best procedures."

In addition, TI Thermal Imaging Ltd has been granted ISO 9001-2008 accreditation by the International Organization for Standardization. It is likely to be the first dedicated thermographic company in the UK to do so.

"We've got thousands of scan hours between us," Wallace explains. "In the oil and gas industry we know the procedures very well; in fact I'd say it's our specialist area. In many ways we are setting the benchmark for the thermographic industry." ■

Further information

TI Thermal Imaging Ltd
www.thermalimaging.co.uk

