
Chemical industry

BOC Gases

Proactive Reliability Maintenance (PRM)

Lubrication analysis



SKF keeps the BOC Gases under pressure

The preventative maintenance services that SKF is providing to BOC Gases don't even require routine site visits, yet they help the company to cut maintenance costs. What's more, they prevented a potentially expensive breakdown.

BOC Gases, the country's largest supplier of compressed gases for industrial applications, operates from nine major sites in the UK and Ireland, as well as many smaller subsidiary sites. Compressors of varying sizes up to 20 MW are installed at all of these locations.

Given that around 400 machines, including compressors, pumps, turbines and fans are involved, maintenance is clearly an important issue. With this in mind, BOC has, for many years, carried out vibration monitoring and lubrication analysis on these machines.

However, it decided that performing this work in house was no longer the most satisfactory approach. The reasons were partly financial but the most important consideration was that methods of analysis and predictive maintenance are becoming increasingly sophisticated, and BOC wanted to be sure that it always had access to the best available technology and techniques available.

Therefore, the company sought a partner for its preventative maintenance programme and, after extensive market research it chose SKF. The reasons for this decision included SKF's established reputation in the field, the flexibility that it showed in adopting BOC's methods of working, its resources and, of course, value for money.

For the most part, SKF's work is carried out remotely. BOC records vibration data from each critical machine and transmits this information electronically to the SKF team, who then subject it to well-proven analytical techniques.

For each machine, this process is performed at least once every six weeks, but the frequency is increased if there is even the slightest concern over the performance of the machine.



To complement the vibration analysis, samples of lubricants are also taken from key machines at six-monthly intervals and are submitted to SKF for analysis and reporting.

After analysing the data and lubrication samples, the SKF team provides a detailed report of its findings in a format that has been developed by BOC as the most suitable and convenient for the company's needs. The report is submitted electronically and is written to a shared storage area within BOC's corporate computer network.

Subject to security safeguards, both BOC and SKF engineers can access this area, which means that both companies have full access to all current and historical data, whenever they need it. Abnormalities are reported using the same system and they also generate a work order if maintenance work is required.

While vibration monitoring is normally carried out using a portable accelerometer, with certain machines this approach is deemed to be too hazardous. In these cases, SKF has installed fixed accelerometers that can be accessed remotely from a safe location.

'We're very satisfied with our arrangements with SKF,' said Jon Hallam, Reliability Engineer at BOC. 'The company provides a totally dependable service through a network of skilled analysts, who process a stream of routine data, and also respond quickly to urgent problems.'

'Since the company has such comprehensive coverage in the UK,' he continued, 'there's always someone close at hand when we do need a site visit. SKF has also provided us with a single point of contact for all our

needs, which makes dealing with the company very easy.'

One of the most important benefits of SKF's work is that it is allowing BOC to plan maintenance more effectively. Maintenance intervals can be increased for machines that show little signs of stress, with consequent cost savings. Conversely, for machines that are heavily loaded, maintenance intervals can be decreased, reducing the risk of costly failures.

However, the benefits of SKF's services are not always this routine. When vibration levels recently started to increase in the main air compressor at BOC's Cardiff Bay plant, the SKF monitoring engineer responsible for the plant recommended that monitoring frequency should be increased.

Over the next two months, further deterioration was noted and, armed with the data provided by SKF, BOC's National Maintenance Department took the decision to take the compressor out of service and strip it.

As the data had suggested, damaged bearings were found, and these were replaced. Had they failed in service, the compressor would have been wrecked. Not only would this have meant very expensive repairs, the compressor would have been out of service for a considerable time, with consequent loss of production. Using SKF's expert machinery monitoring services makes excellent economic sense, as BOC's experience has demonstrated. It provides a sound basis for planning maintenance to maximise effectiveness while minimising costs, and it also greatly reduces the risks of costly and inconvenient in-service plant failures.

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