

CHEMICALS CASE STUDY - CHEMICAL MANUFACTURER, NORTH EAST ENGLAND

Expert oil analysis reduces lubrication costs



ABB uncover cost savings and help ensure the integrity of critical equipment.

A common response to problems with lubrication systems is to change the oil. However, this can be costly and doesn't always solve the root cause of the problem. There is another way.

A UK chemical plant used a 3-stage, integrally geared centrifugal compressor to provide process air. This compressor had a 5,000 litre, circulating oil system which lubricated the gears and bearings, using ISO VG 42 mineral based turbine oil.

Due to the critical nature of the machine, it was subject to a wide range of condition monitoring activities, including routine oil sample analysis. When a key measure in the oil samples changed, the customer considered changing the oil, but asked ABB to provide an expert view first.

Solution

It is generally recognised that lower levels of anti-oxidant additive lead to oil degradation. This creates immediate potential for wear on machine bearings and gearboxes.

Routine analysis indicated that the anti-oxidant level in this particular oil circulating system had diminished over a period of one month from 0.42% to 0.30%.

There was an immediate concern that the oil was beginning to deteriorate. Other physical characteristics of the oil, however, had not yet changed. Additionally, other chemical additives within the oil were essentially constant.

The standard response to a problem like this would be to recommend an oil change, which would have cost £2,000. Had production been stopped to change the oil, then the cost of lost production would have been in excess of £100,000.

ABB's experience and independence led to an alternative solution. A concentrated additive 'spike' was specified, at a cost of £160. This was added to the lubricating oil with the machine on-line and it returned the oil to a condition suitable for the duty.

ABB oil analysis service includes oil sample analysis, expert support from our experienced tribologists and machines engineers. This service is independent of any supplier of equipment and lubricants.

The oil sample analysis programme and specifications can be structured solely to suit the needs of the machine, its type and duty.

Validation of the analysis by our machines engineers and tribologists ensures optimum recommendations and remedial actions. Based on many years' operational support experience, they give the client the lowest life-cycle cost solutions.

Benefits

- Significant cost savings
- No lost production
- Avoiding damage to equipment

