Case Study

65% Reduction in Gas Compression System Trips.

Working alongside a global oil & gas operating company, OPEX helped to significantly cut the number of gas compression system trips on a UKCS asset. Here’s how we did it.

Case Study

The Data

Using a range of bespoke predictive models and algorithms, OPEX's data scientists analysed on a daily basis more than 1.5 million data points and 47 thousand data relationships on behalf of the customer.

Data was taken from the full gas compression system including 5 multistage centrifugal compressors, scrubbers and coolers.

Our Approach

Working closely with the customer's asset team, we applied predictive technologies and data science expertise to support a drive to:

- Reduce downtime
- Maximise the efficiency of the gas compression system
- Reduce unplanned maintenance costs

Typical Insights

Some examples of the types of issues we helped to identify on this system:

- Detection of deteriorating temperature control valve performance in lube oil preventing an HSE incident
- Dry gas seals – early detection of hanging seal faces
- Detection of thrust probe instrument drift
- Long term prediction for suction cooler fouling rate reducing production bottleneck
- Detection of high flare back pressure leading to higher primary seal back pressure

A Practical Example

Prevention of Dry Gas Seal Failure

During daily analysis, OPEX's data scientists identified an issue with the flow rates on the dry gas seals during the start-up of the HP compressor after a long period out of service.

The offshore team was promptly notified of the situation and an intervention was carried out to rectify the issue.

Had the system continued to run, it could have led to seal damage, significant repair costs and potential production loss. The situation was magnified as the other HP compressor was out of service at the time.

The customer estimated that this single intervention had avoided 10 days' production loss.

The Impact

During the first 12 months of application:

40

Threats to stable operations identified

$20million

Production loss avoided

65%

Reduction in gas compression system trips

$648k

Maintenance savings

OPEX