

Pump Seal Failure - Case Study

Context:

Our client had excessive Seal failure on their pumps and approached Flexachem to investigate the issue at hand while in tandem there was also a project to age profile all of their pump assets.

Challenges:

The client's capital budget was limited, thus Flexachem needed to find alternative ways to improve the condition of the pumps.

Analysis Of The Situation:

Flexachem examined all seals and pumps and assessed the situation. Flexachem evaluated all pumps on site with regards to; ■ Operation, ■ Condition, ■ Alignment ■ Age and then delivered a comprehensive report on the findings.



FLEXACHEM IMMEDIATE SOLUTION

Typically, "10% of pump failures are due to normal mechanical seal or bearing wear". Flexachem installed a vibrational monitoring tool (IPS Beacon) on all "bad actor" pumps, ie. Pumps with high seal failure. The IPS Beacon has a take away memory; and from the analysis of data acquired from the IPS Beacon the client had a cost-effective means of early notification of adverse operating conditions. This allowed them to implement corrective actions so that Mean Time Between Failure was increased. Thus the IPS Beacon extended the lifecycle of the pumps.

FLEXACHEM SHORT TERM SOLUTION

Flexachem installed a Flowserve ISC2 Mechanical Seal. The ISC2 can tolerate dry running for a limited time with its exclusive thermal management technology. The advanced seal design features deliver superior rotating equipment reliability. The sleeve acts as a heat sink, lowering seal face operating temperatures and transforming cavitation and dry running "bad actors" into highly reliable installations. The ISC2 Mechanical Seal ensured continuous up-time.

FLEXACHEM LONG TERM SOLUTION

Pumps over a certain age and profile condition were ear-marked for phased replacement with a Durco Mark 3 Power End. The Power End is the "Heart" of the pump which consists of the shaft and bearing design. Durco offer the largest shaft and bearing components available in the standard ANSI Pumps. The new Power End gave the existing pumps significantly extended life expectancy. Where the pumps were deemed high risk of continuous failure, owing to their condition, they were sized and replaced with Durco Mark 3 pumps.