

Solvancer[®]-based technology helps refinery avoid a major shutdown, saving \$8M in potential costs



Compressor bearing

ExxonMobil refinery

Billings, Montana

Situation

The ExxonMobil Billings Refinery requested assistance troubleshooting a progressive issue with rising bearing and oil temperatures as well as water contamination on a critical Ingersoll Rand air blower after an unexpected oil cooler failure. At the time of problem notification, bearing temperatures had risen to 227°F and were rising at approximately 2°F per day. The refinery was faced with a potential shutdown if bearing temperatures couldn't be stabilized. An unplanned shutdown would require a 30-60 day outage, result in significant costs and loss of productivity. The Mobil Serv Engineering team was brought in to help identify the root cause of escalating bearing temperatures and help the refinery avoid an unplanned outage.

Recommendation

After conducting a bearing inspection, the Mobil Serv Engineering team identified that the oil was contaminated with 50% water, which accelerates equipment wear and degradation. The team recommended an immediate bleed and feed with Mobil™ DTE 832 gas turbine oil, which helped reduce the water contamination to about 8% while the refinery waited for a vacuum dehydrator. The team also deduced that the high bearing temperatures were likely being caused by hot varnish deposits, so the team recommended the use of a Solvancer[®]-based oil soluble cleaner to dissolve varnish deposits without taking the equipment offline. Upon application, the team noticed an immediate improvement in bearing temperature, and the temperatures stabilized shortly afterwards. Finally, the team recommended the use of a vacuum dehydrator to remove the remaining water from the oil and converting the equipment to Mobil SHC™ 824 gas turbine oil, a synthetic oil that offers greater varnish protection and longer oil life even at elevated temperatures.

Impact

Through this quick action, the team's recommendations, and the use of Fluitec's Solvancer-based technology, the refinery was able to identify the root cause of bearing temperature escalation and oil contamination, stabilize temperatures to avoid costly refinery shutdown, and maximize productivity.

Benefit

By avoiding a shutdown, the refinery was able to maximize productivity, enhance safety, and avoid costly manpower and equipment costs, saving the company nearly \$8.3M.

Company reported savings of **\$8.3M USD**

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† Solvancer is a component for oil soluble cleaning technology developed by Fluitec.