Impact Severity Monitoring Provides Early Detection of Valve Failures

Introduction

A methanol producer had been experiencing unplanned downtime of a critical machine train resulting in lost production and unplanned maintenance costs. These unplanned events were the results of undetected failure modes that site leadership anticipated may have been detected had they been leveraging vibration monitoring technologies. Metrix worked closely with the end user to define a vibration monitoring solution to address the failure modes of most concern. The ultimate solution included IT6811 impact transmitters for cross head impact, DPS for rod position and motor vibration transmitters, and ST5484E velocity transmitters for the reciprocating compressor frame vibration monitoring.

Challenge

Following installation and commissioning of the Metrix instrumentation, plant personnel closely monitored the collected data in their plant historian which was shared with Metrix on a monthly basis for review. During the most recent review of the data, it was observed that the one of the IT6811 Impact Transmitter readings was reporting a significant step change, which was abnormal.

Solution

The end user leveraged site personnel as well as a third-party analyst to investigate further and determine the root cause of the increase in impact severity. Upon inspection, it was noted that multiple valves on one of the compressor cylinders had failed. The valves were replaced and the impact severity measurement returned to normal level.

Benefit

Without regular impact severity monitoring, the valve failures may have gone undetected, eventually leading to unplanned downtime and loss of up to $100K in revenue per day.

$100K **Savings**

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Doc: 1923287 • January 2022