

OMIFCO Saves \$250,000 Using the Art of Balance

RESULTS

- \$250,000 in savings of hardware reinstallation costs
- Process change allowing for in-situ balancing of fans and large motors
- Improved efficiency, cutting downtime by days



APPLICATION

Portable analysis tools are used at the Oman India Fertilizer Company to gather vibration data to allow early detection and efficient repair of equipment problems.

CUSTOMER

The Oman India Fertilizer Company S.A.O.C. (OMIFCO) is a joint venture business operating a state-of-the-art two train ammonia-urea fertilizer manufacturing facility in the Sultanate of Oman. In 2013 alone, OMIFCO produced 1.38 million tons of ammonia and 2.15 million tons of urea, helping to meet the growing agricultural demand in India.

CHALLENGE

OMIFCO's internal maintenance team is tasked with supervision and repair of heavy duty boiler feedwater pumps and in situ balancing of large fans driven by powerful motors. Much of the equipment is required to be running at all times in order for the company to meet its goal of producing fertilizer 365 days a year.

SOLUTION

The internal maintenance team at OMIFCO knew that reliable analysis requires the right tool, so they turned to the CSI 2130 portable analyzer. In use since 2012, the analyzer has helped OMIFCO detect numerous problems before they became safety concerns or resulted in catastrophic equipment damage and costly shutdowns.

“We’ve used the portable analyzer to detect vibration issues on a variety of equipment including turbines, fans and motors. With each application, the results have been fast and accurate.”

Ankit Niranjana,
Inspection Engineer

In February 2013, the maintenance team detected a 50% increase in PeakVue™ spectrum and waveform, followed days later by another large increase. Analytics reported a slight increase in turbine horizontal vibration velocity, prompting the team to take the machine out of service for inspection. This slight increase turned out to be the result of a severely damaged thrust bearing, with large pitting in the inner race and small pitting in the ball bearings. After the replacement of the thrust bearing, all vibration readings returned to normal levels. This was just one example of the team using preventative diagnostics to avoid catastrophic equipment failure.

The maintenance team extended the use of the portable analyzer to in situ balancing of fans. More than 12 large fans have been balanced on-site, reducing downtime, labor, and materials costs.

Moreover, equipment with a history of unidentified mechanical problems became a thing of the past. One particular motor had a history of high bearing temperature and high vibration. In addition, the motor required frequent rotor rebalancing. Though the problem would stop after rebalancing, it would inevitably reappear after a short time.

The motor had been removed and repaired at the vendor's maintenance shop; however, after reinstallation, the analyzer still detected high vibration. Not to be deterred, the team decided to try saving the \$40,000 cost of replacing the rotor by balancing the motor in situ using the CSI 2130, a process that had never been attempted on-site.

With the help of calculations from the CSI 2130, the team was able to balance the motor and return vibration levels to normal within four hours. In fact, the entire balancing operation was wrapped up in less than a day. In contrast, removing the motor would have taken it out of commission for up to three days.

With a combination of the right tools and experience, the OMIFCO internal maintenance team saved the company valuable time and resources. Currently, the team is performing in situ balancing whenever it is required.



“Using the CSI 2130, the team balanced a motor in place and returned it to normal vibration levels in less than a day – a feat that would have required up to three days if the motor was removed.”

Abdullah Al Mashrafi,
Inspection Engineer

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