

Orbit Magazine

Case Study :: High Vibration in India

Date : April 1, 2015



Customer Success Story - High Vibration in India

An example of how GE helps customers in the Oil & Gas industry

GE's Bently Nevada* MDS engineers help one of India's largest refineries restore use to a critical piece of machinery through analysis with portable data collectors.

When a secondary air fan began showing high vibration amplitudes with no immediate cause, GE's Bently Nevada Machinery Diagnostic (MDs) team immediately dispatched an engineer equipped with an ADRE* 408 Portable Data Collector to diagnose and resolve the problem.

PROBLEM

A secondary air fan was commissioned in 2010, at one of India's largest refineries. In 2013, with no major maintenance performed, the machine was tripped due to a power failure. Upon restarting the machine, the secondary air fan was showing high vibration amplitudes in all of the installed vibration sensors. During an inspection, it was observed that the bearings were damaged. After the bearings were replaced, the machine was restarted and it was observed that vibration amplitudes remained high.

SOLUTION

GE's MDS Engineer was dispatched to the site with an ADRE 408 Portable Data Collector to assess the problem. All physical inspections of the casing bolts, foundation bolts, bearing housings and bearing bolts indicated that they were all in working condition. Through the data collected on site and GE's MDs expertise, it was found that the secondary air fan had a hollow cone at the

Orbit Magazine

center, which can lead to sediment buildup. this build up can settle at various positions, creating a variable heavy spot and increased vibration. The hollow cone at the center of the secondary air fan was found to have 3.2 kg of sand inside. the sand was removed and the secondary air fan began to operate normally.

PAYBACK

Due to the responsiveness of the MDS team, the problem was quickly identified and resolved. When the fan was shut down, the refinery was unable to run at full capacity. Once the secondary air fan resumed operation, the plant was able to run with a 30% efficiency improvement.

In addition, the customer was so impressed with the quick and decisive actions from the MDS team, that they initiated a supporting services Agreement (SSA) with GE's Bently Nevada team to support their future needs.

BENEFITS

- Enhanced machinery integrity – through working with MDS engineers, the customer was able to identify and resolve an unusual issue within the secondary air fan.
- Increased production efficiency and lowered production losses – By quickly identifying the problem through portable data collection and MDS, the refinery was able to save an estimated \$500k USD.
- Cost-effective and reliable diagnostics services – GE's Bently Nevada MDS team is essential for plants that lack an on-site machinery diagnostic engineer.

Copyright 2015 Baker Hughes, a GE company, LLC ("BHGE") All rights reserved.

Bently Nevada, Orbit Logo, ADRE, Keyphasor, Promimitor, Velomitor and System 1 are registered trademarks of BHGE in the United States and other countries. All product and company names are trademarks of their respective holders. Use of the trademarks does not imply any affiliation with or endorsement by the respective holders.

The information contained in this document is subject to change without prior notice.

1631 Bently Parkway South, Minden, Nevada USA 89423

Phone: 1.775.782.3611 Bently.com

