



REMOTE MONITORING PREVENTS UNPLANNED FAILURE ON CRITICAL BALL MILL DRIVE

AVT Reliability® supports this cement production site with condition-based maintenance powered by Machine Sentry®. Continuous monitoring of critical milling assets enables early fault detection and planned interventions, helping maintain production and reduce downtime risk.

“The vibration data gave us the insight needed to act early. The replacement was planned and completed without any disruption to production.”

— Remote Diagnostic Centre, AVT Reliability®

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THE CHALLENGE

The asset monitored was an electric motor driving Cement Mill #3 via a gearbox.

As a critical component of the milling operation, this asset has no redundancy, failure would result in immediate production stoppage, costly downtime, and potential acklog across the site. Any developing fault had to be addressed before escalation.

OUR APPROACH

In May 2024, AVT's Remote Diagnostic Centre (RDC) observed a rising trend in acceleration levels on the motor drive-end bearing.

At the time of detection, data was being collected daily and analysed every two weeks.

As the fault developed, the analysis frequency was increased to twice weekly. This proactive monitoring strategy enabled AVT to track the deterioration in real time and escalate appropriately.

OUR FINDINGS

Spectral analysis revealed developing signs of bearing deterioration.

Over the following weeks, both the trend and spectral content continued to increase.

By mid-June 2024, AVT raised an Action Note advising the client to replace the motor bearings at the next available opportunity to avoid in-service failure.

THE SOLUTION

The site team installed a replacement motor from stock, and the original unit was sent away for refurbishment.

Post-installation vibration data showed a clear reduction in acceleration levels, confirming successful resolution of the bearing issue. The refurbished motor is expected to return to site as a future spare.

Once a replacement motor was installed, monitoring continued with weekly analysis via Machine Sentry®, confirming a return to satisfactory condition.

FOLLOW UP

AVT is awaiting strip-down feedback from the client on the removed motor and its bearing condition.

All current readings remain within acceptable thresholds, and no further action is required at this time.

AT A GLANCE

INDUSTRY: Cement Manufacturing
PROCESS: Cement milling
EQUIPMENT: Electric motor and gearbox drive system
PRODUCTS: Machine Sentry® Sensors
SERVICES: Remote condition monitoring and vibration diagnostics

Need help?

Contact our experts

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Fig 1: Acceleration spectra before replacement (Y-axis: 0.35 g) |



Fig 2: Acceleration spectra post-replacement (Y-axis: 0.7 g)

