

i-ALERT[®]

Case Study

i-ALERT[®] equipment health monitor Application: Mining

Repeated failures of ore processing machine ended thanks to new vibration monitoring devices.

Problem

A global leader in mineral processing uses a so-called Exciter machine in their ore processing operations. The machine aggressively shakes a large screen to separate larger rocks from smaller ones following crushing. All of this shaking causes bolts to get loose and the alignment on the motor to shift, resulting in repeated destructive failure of the motor. Unfortunately, there isn't much warning before failure. The company had tried a variety of externally powered sensors, but these also frequently failed due to power cable fatigue.



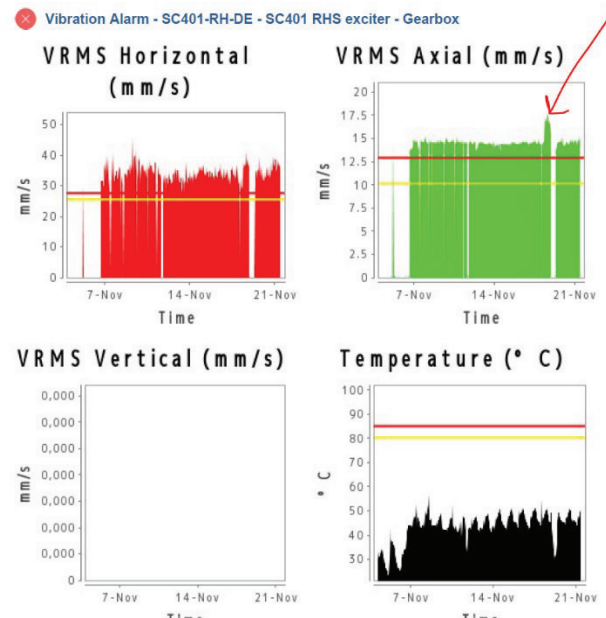
The vigorous shaking of the Exciter machine causes motor misalignments which led to unplanned downtime.

Benefits

The i-ALERT equipment health monitor is a tiny sensor that continuously tracks tri-axial vibration, tri-axial kurtosis, temperature, and run-time hours. Unlike typical analogue sensors, it is powered by batteries, so there are no cables to become fatigued. The sensor mounts easily and is ready to use. What's more, it is Bluetooth[®] Smart-enabled, so it can send data to a mobile device wirelessly from a safe distance of 30-100 ft. (10-30 m) while the equipment is still running.

Solution

The company heard about the advantages of i-ALERT and decided to try it on the Exciter machine. Using the included mobile app, they were able to quickly identify a spike in the baseline vibration that corresponded to the beginning of a shift in motor alignment. The spike appears early enough to allow the machine to be shut down and be realigned before damage can occur. The trial was so successful, ten sensors have now been placed on the machine. This has effectively ended the cycle of endless failures and unplanned downtime. Cost savings and increases in productivity have proven to be substantial.



This i-ALERT data shows that whenever a motor misalignment begins, a spike in the axial frequency can be seen.

Part of the ITT Family

