

Preventing conveyor system downtime

Project Challenge:

Monitoring systems detected excessive startup torque on a 4,200-foot Joy underground-to-surface conveyor system at an Illinois coal operation. Site operators needed the issue resolved quickly to avoid months of potential downtime, as the system is the main production artery for the mine.

The Solution:

We approached the existing customer about engaging in a trial period where the two would partner through the company's Smart Solutions offering to improve shovel reliability and avoid catastrophic failures on major components. The customer agreed to give us six months to prove the value of the offering at its coal mine in Australia.

Smart Solutions experts took baseline readings of the system during commissioning to enable flawless startup.



Once the system was in regular operation excessive startup torque was detected during the continued monitoring. The Smart team then used those baseline readings to quickly target the problem area.

Personnel then immediately went to the site to investigate the problem area with handheld vibration monitors and confirmed there was excessive vibration on the head drive pulley due to a faulty coupling.

Left undetected, this could lead to damage of the four 2,500-hp gearbox shaft assemblies, which are long lead time items.

Normal production was able to continue while our teams monitored the anomaly and determined how to resolve the problem and prevent damage to the gearboxes.

Through data tracking, consistent monitoring and quick action, Smart Solutions experts quickly addressed the issue and devised a solution.

The Results:

Zero of the four gearboxes were damaged by the excessive vibration, saving the customer months of costly downtime and the potential for \$2 million in gearbox replacements. The issue was fixed during a scheduled maintenance period, eliminating the need for any unplanned downtime and allowing nonstop production at the site.

Recognizing the potential severity that was avoided through quick detection and action, the customer then worked with our teams more proactively moving forward.