Case Study
Mining

How a mining company eliminated unplanned shutdowns and saved $1 million a year

When a gold and copper mine in rural Australia had repeated failures on all of the mill motors that drove production in its grinding plant, a lot was at risk.

The company processes the ore on site, grinding it to a slurry to prepare it for the recovery of gold and copper. When a mill motor fails, the loss of production and the cost of repair have a considerable negative impact on revenue.

Repeated failures caused reliability headaches

The mill motors were flashing over and arcing on their sliprings and brush gear, putting the safety of employees at risk from flying debris and causing expensive emergency shutdowns. The mine operators had performed limited maintenance, but the work wasn't documented and the problems continued. Each critical mill motor failure could cost the company more than $500,000 in lost production and another $100,000 to overhaul the failed machine. The company needed a solution that would stop the repeated mill motor failures once and for all.

machinemonitor® identified a process problem

The mine operators wanted to understand the cause of the problems so they could prevent future occurrences. They began to search for a strategic partner with a reputation for problem-solving and extensive experience in machine asset management. The mine turned to machinemonitor®, an independent electrical engineering consultancy known for its innovative products and services.

machinemonitor® immediately recognised the site maintenance staff was underestimating the importance of brush principals, namely:

- Never mix brush grades on a single slipring
- Always confirm fit and measurements
- Always have a system in place to check OEM-supplied brushes to drawings and specs for compliance
- Never change the load on the motor without considering the impact on the brush system

A one-time fix would solve the problem for the moment, but a change in personnel or simply human nature could cause the problem to re-emerge in the future. machinemonitor® knew that a process-based approach was necessary to ingrain proper brush maintenance practices, along with a software solution that would improve lifecycle care of the mill motors.

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machinemonitor® is an independent electrical engineering consultancy that helps companies in the heavy industry sector gain a competitive advantage by increasing the efficiency and lifespan of capital assets. machinemonitor® has 15 years of experience in the asset management of electrical rotating machines and auxiliary equipment, and acts as a strategic partner by delivering design, troubleshooting, specialised field testing, repair management, condition monitoring and unique risk management services.

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machinemonitor®
Electrical Asset Reliability Management

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A simple standardised approach, training and appropriate tools were the solution

First, machinemonitor® developed a strategy for the mining company to properly maintain its mill motors, documenting the procedures and methods so a set of standards would be available for every current and future member of the site maintenance staff. To further aid the staff in maintaining the mill motors correctly, machinemonitor® conducted comprehensive training in best practice brush maintenance.

machinemonitor® also provided the company with purpose-built tools, including BrushMonitor®, a software platform that allows maintenance practitioners to base decisions around carbon wear rates on objective measurement and scenario planning. Additionally, machinemonitor® delivered continued support in dealing with brush manufacturers.

This methodical, technology-aided approach resolved the problem. The mill motors were no longer subject to dangerous flashovers or arcing, and unplanned shutdowns were eliminated.

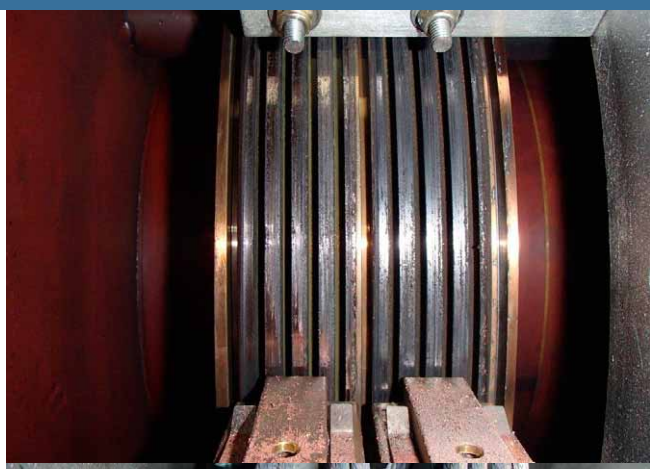
Now, better machine reliability is a reality and flying debris is just a memory

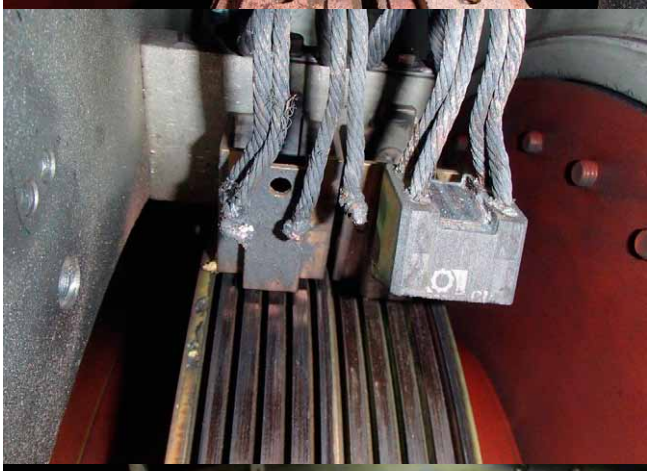
The mine operators reported considerable business benefits and cost savings from the work performed by machinemonitor®. Unplanned outages were eliminated, saving the thousands of dollars that each outage had cost. Operating time between planned shutdowns was increased, resulting in a 25 percent reduction in planned shutdowns and saving over $1 million per annum.

The mine operators now have a staff that is trained and competent in brush maintenance. The staff is able to rely on documented procedures to carry out maintenance events, and they say that they are more confident in their abilities to make informed maintenance decisions. Most importantly, the risk of injury to staff was reduced.

The company is no longer forced to react to machine failures. They have the knowledge and the tools they need to conduct maintenance in a controlled and efficient manner. Today, the mine company has confidence in its machine reliability.

Documented processes and education ensure a safer more efficient business





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