Process plant optimisation realised with FLSmidth SmartCyclone™

Process plant optimisation techniques have become a necessity for mines looking to maximise their operating performance by keeping costs low, throughput high and downtime to a minimum. FLSmidth's automated SmartCyclone™ system is a solution that delivers in all three areas for cyclone circuits, a vital processing element in any plant.

SmartCyclone manifold system installed with roping sensors monitors and reacts to cyclones when roping occurs.

FLSmidth's SmartCyclone is a monitoring and control solution for reducing cyclone-related process deviations. It also improves cyclone overflow particle size distribution, predicts and controls cyclone maintenance schedules, and optimises closed-circuit grinding processes.

This equates to monitoring the performance of individual cyclones within a circuit in real time, preventing unplanned breakdowns from occurring and monitoring wear rates while ensuring the cyclones are operating optimally at all times. This translates into higher efficiencies in the plant and ultimately, higher profitability.

The SmartCyclone closed circuit grinding optimisation system combines a variety of FLSmidth patented technologies which include the FLSmidth Krebs SmartCyclone wear detection sensor technology as well as the Krebs' patented roping sensor technology with patent-pending wireless controller system. This technology immediately identifies if a cyclone is malfunctioning.

SmartCyclone wear and roping sensors can be installed on KREBS® cones, apex and other cyclone components.

The closed-circuit grinding optimisation system also incorporates FLSmidth's ECS/ProcessExpert® process control software with a new patent-pending SmartWear™ cyclone maintenance algorithm. One of the largest benefits associated with this software is the ability to develop a uniform operation strategy that outlines the best way to run the plant. Once this strategy has been established, the necessity to train new operators is reduced.

Reducing or eliminating manual operation, which decreases the potential for human error, is in fact one of the overarching benefits of SmartCyclone.

FLSmidth has more recently enhanced its Krebs SmartCyclone system with wireless technology that enhances installation simplicity by eliminating the need for individual nodes and the interconnecting cables between the sensors and nodes and associated controllers.

It utilises a central wireless controller that can handle up to 16 sensors per unit; providing real-time wireless detection and communication of roping and/or wear data. The new wireless controller unit is a handheld device that can be removed from its docking/charging station to sync the individual sensors. Once it's removed, it goes into battery power mode and the user can walk to a desired sensor, activate it with a magnet; trigger and set the necessary operating parameters. ❑

Product line technician docking the SmartCyclone™ handheld wireless controllers.