Produktneuheiten

New ABB Drive Solution significantly decreases the Cost Threshold for Gearless Conveyor Technology

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Fewer parts and new motor technology increase the reliability and efficiency of the overall conveyor system. A permanent magnet motor specifically designed for mining applications is a core element of this system that contributes to its reliability and ability to perform in the most challenging environments.

In a pilot project, the new gearless solution was installed on a high capacity (15.000 t/h) discharge conveyor of a bucket chain excavator in parallel with the existing geared drive (Picture: ABB)

The gearless conveyor drive system eliminates the gearbox from the drive. This reduces the number of main wear parts, so less maintenance is needed, and lengthens the lifespan of the equipment. The expected lifespan for the drive train increases by more than 10 years when compared to traditional geared systems, to a projected in service life of 25 years.Other advantages include a considerable reduction in the drive system’s footprint, so it can be installed in smaller spaces, less weight, and a reduction in the instrumentation required to operate the system. The gearless drive design is also more energy efficient, requiring less power, and operates more quietly, thus reducing noise emissions.In July 2017, the pilot project of this solution was installed in collaboration with Lausitz Energie

Bergbau AG (LEAG) in the open-pit lignite mine Jänschwalde, located close to Cottbus, Germany. The new gearless solution was installed on a high capacity (15.000 t/h) discharge conveyor of a bucket chain excavator in parallel with the existing geared drive. Both drives connect to the same pulley shaft to allow for exact benchmarking. The gearless solution has performed better in regard to dynamic accuracy and overall efficiency than the existing traditional solution.The operational data demonstrate the advantages of the gearless solution with less components. According to ABB a gearless solution is more reliable (with a 50% lower failure rate) and requires less maintenance. It is meeting eco design and energy performance requirements according to international standards to support mine site's environmental approvals or certification. The new drive also consumes 5% less energy than the other installed drive."The interest of LEAG in this pilot project mainly lies in the expectations related to higher efficiency, lower wear and hence less expenses for repairs and maintenance," said Peter Scholze, Head of Service Open Pit Mines, LEAG. "These results were verified from measurements and analytics taken during operations in the past few weeks. At the same time, the project proves LEAG's interest in a future-oriented and innovative technical approach. Thanks to the close cooperation between LEAG and ABB, the project could be finalized within a short period of time. Since commissioning has taken place, the drive has been running smoothly."The onsite team was impressed with ABB's quick and flawless project commissioning, The operations and maintenance team also found the new system to be easy to learn, understand, and use, without any major difference in operation or handling when compared with the existing systems/ technology.