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Ingenuity for life



Buenavista del Cobre in Cananea (Sonora), México

A reliable grid can move mountains

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Uncovering buried potential in an industrial microgrid

The Buenavista del Cobre copper mine, in Cananea, Mexico, has made a shift towards smart mining. Using custom-configured Siemens control technology, the mine has been able to achieve a 60% reduction in down time and significant cost savings. The single-source solution was adapted specifically to meet the needs of the customer, incorporating a distributed control center (DCC), energy backup, data network, installation of Spectrum Power™ 5, and the configuration of the control systems for the substations.

Generating real benefits in real time

The Buenavista del Cobre mine has the Spectrum Power™ grid control platform at its core. Implementation of the platform has resulted in considerable improvements. In addition to a 60% reduction in downtime, a 50% reduction in costs has been achieved, both as a result of the automated consumption reports – generated in real time with just a few clicks of the mouse – and through

At Buenavista del Cobre, a rapid return on investment (ROI) was made possible through:

- 60% reduction in down time
- 50% reduction in time and costs
- Improved safety
- Operation and fault prevention in nearly real-time
- Improved efficiency through better maintenance scheduling
- Accurate assessment the quality of the energy received
- Product scalability, for medium voltage and other processes

improved maintenance scheduling. Operational risk for technical personnel has also been decreased significantly.

“It’s not just a tool: this system serves as our eyes and hands for operating our electricity grid”

Grupo México.



The challenge: Getting smarter under pressure

Grids are growing smarter. To keep up, the Buenavista del Cobre copper mine in Mexico was faced with a challenge: find a way to automate data acquisition and create a more proactive maintenance approach without halting operations for any reason. Any error during construction, point-to-point testing or commissioning of the system had to be avoided.

Other key priorities were adherence to both the “Zero Harm” culture of the highly safety conscious Buenavista del Cobre mining complex and the strict timeline. All work had to be completed within the scope of the annual major maintenance shutdown, scheduled for October 2015, and prior to the first maneuver to be performed by the new distributed control center (DCC). Final monitoring of production-related energy consumption had to be implemented by December 2015, giving the team just two months to execute all construction and monitoring activities.

The Siemens Solution: Customized control technology

Buenavista del Cobre was looking for innovative strategies to manage their challenges. And that’s what the new state-of-the-art DCC promised to deliver. Equipped with the Spectrum Power™ grid control platform, the Siemens solution made decreased down time and significant cost savings a reality. Operating errors and major maintenance outages were also reduced, making it possible to sink maintenance costs and decrease risks for personnel, both of which were high-level priorities.

The complete solution came from a single source and was custom designed by Siemens to perfectly fit within the designated DCC space. It included the energy backup, a data network (with four compact RTUs SICAM combined with Ruggedcom 1500 APC communication devices), installation of Spectrum Power™ 5, and the configuration of Buenavista del Cobre’s substation control systems using SICAM PAS technology.

The future is bright for Buenavista del Cobre

Since Spectrum Power™ is scalable, there is room to grow, providing expansion capacity for medium voltage and other processes.

The overhaul has increased transparency and allowed mine personnel to devote themselves to more productive work and tasks, new technical capacities, or to creating effective new cost reduction alternatives and activities to increase energy efficiency. And simplified standardization now allows personnel to easily assess the quality of the energy delivered by the Federal Electricity Commission and adjust energy models accordingly.

The various operational improvements, together with the employee initiatives that they are inspiring, place Buenavista del Cobre well on the path to intelligent mining.

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