

Unidrive SP is making the earth move!



Heavy duty AC drives from Control Techniques have been chosen for a major open-cast coal mining project in Kostolac, some 90 km south-east of Belgrade.

This prestigious contract was won by Control Techniques' local Drive Specialists, Master Inzenjering d.o.o. of Subotica and their long-term system partner and motor manufacturer, ATB Sever, against very strong competition. This was an official government contract based on a complex point-scoring system that involves price, technical solution, experience and local support. Petar Mikovic, project manager of ATB Sever comments, "Our close working relationship with Control Techniques and Master Engineering combined with our experience of such schemes and our customer support all contributed to winning the contract."

ATB Sever provided the customer with a complete turnkey solution including electrical control panels, software, motors and all electrical and commissioning works on site.

The government owned Te-Ko Kostolac mine is the second largest open-cast coal mine in Serbia and directly supplies an adjacent coal-fired power station. The application is for the drive and control of a massive two-part conveyor system, used to remove the earth and rock scoured from above the coal seams.

Four 315 kW heavy duty Unidrive SP free-standing drives have been supplied, each fitted with a Profibus module that communicates directly with the central PLC and ESA HMI panels. The compact size and easily installed and maintained modular format of the drives were key factors in the selection of these drives, which are installed in the limited space clean electrical switch-room mounted on the conveyor station.

The four drives operate in Control Techniques' unique open loop RFC mode, and control two pinch-drums, with one 315 kW, 1490 rpm motor at each end of each drum. The control system monitors the load and adjusts the drives' speed to ensure an even distribution of motor power.

The system has been designed to operate on three, or even two, motors in the event of a failure. Most of the time, the conveyors run at full speed, 50 Hz / 4.5 M/sec, but operates at reduced speed during periods of light load to save energy.

Diggers load earth onto the 1.6-M wide loading conveyor system, which carries the load onto a dispensing conveyor. Both conveyors can be moved to where they are needed by a caterpillar system and the total length can be up to 2 kilometres. The load during the 24 hours a day operation is fairly even, depending on the nature of the earth and rock being loaded, with capacity varying between 3,000 and 5,000 tonnes per hour.

The Unidrive SP free-standing cubicles offer a pre-engineered solution with a small space envelope and competitive pricing. Yet customers can be certain of a robust field-proven product that also offers industry-leading communications, feedback options, multiple operating modes - including energy-saving four quadrant operation - and a high level of programmability.

"This project has gone very smoothly," adds Petar Mikovic, "and we are already looking at the next major scheme."

KEY BENEFITS

- INBUILT SYSTEM REDUNDANCY
- ENERGY SAVING MODE
- COMPACT SIZE
- EASY TO INSTALL & MAINTAIN



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