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Standby Power

Case History

South Deep Mine

Where:

South Africa

What:

Seven 2,250 kVA, 11 kV diesel powered generator sets with switch control and paralleling equipment.

Purpose:

Provision of emergency standby power for the gold mine's safety-critical evacuation power, dewatering and ventilation.

Cummins Power Generation helps support safety of South Deep's gold mining workforce

SOUTH AFRICA - South Deep mine has access to the world's richest known untapped gold orebody. Owned by Gold Fields, one of the largest mining companies in the world, the mine's 64 million ounce reserve will play a vital role in extending South Africa's gold mining heritage for at least another generation.

Gold Fields plans to spend \$1.1 billion on development at South Deep to triple its gold output by 2014. With a workforce of 4,500, the mine, located 60 km to the west of Johannesburg, produces 62,000 ounces of gold per quarter. This figure is expected to increase to around 180,000 per quarter in the next few years to ensure it fulfils its potential as one of the world's greatest deep level mechanised mines.



DMC300 digital master control system



Cummins QSK60

South Deep's main and twin ventilation shafts currently extend some 3,000 meters and are 2,750 meters below the surface. Development plans include upgrading and deepening its mine shafts, installation of new technology and expansion of the mining area.

The gold mining industry has a poor safety record and mine fatalities are a big concern in South Africa where some 120 mineworkers have been killed this year. Gold Fields' management has pledged to work with the rest of South Africa's gold sector to improve the industry's safety record and has made significant improvements during the past year. As part of its programme to prioritise safety, Gold Fields selected Cummins Power Generation to install dependable emergency back up power, which takes over in the event of a grid power outage.

South Deep needed to ensure it was not dependent on the national grid for management of both safety and critical functions at its deep level shafts. In January 2009, Gold Fields invested in the provision of standby power generating facilities at its South Deep site.

The fully-integrated standby power solution will ensure power is delivered to operate the elevators, dewatering and provide ventilation of the mining shafts to enable the safe evacuation of underground staff in the event of an emergency.

Gold Fields was particularly interested in sourcing generator set solutions that could operate efficiently in adverse conditions in the most difficult terrain. Given Cummins Power Generation's proven track record as a major player in the supply of turnkey solutions and global support to the deep mining industry, Gold Fields chose Cummins to provide the power solution.

Each of the standby power generator sets is designed to supply ten percent of the mine's power requirement. The 2,250 kVA, 11 kV diesel-powered Cummins generator sets can start up, synchronise and be on-line in as soon as 30 seconds.

The units are ideally suited for efficient operation both in remote locations and in high-ambient temperatures, helping to ensure that South Deep's massive underground resources will extend South Africa's gold mining heritage for a future generation.

For more information about integrated standby power systems or other energy solutions, contact your local Cummins Power Generation distributor or visit www.cumminspower.com



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