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CONTROL TECHNIQUES WINS CONTRACT FOR EVRAZ HIGHVELD FOUR-STRAND BILLET CASTER

Control Techniques has won a major contract for the electrical upgrade of M/C4, the four-strand continuous casting machine at the Evraz Highveld Steel and Vanadium Ltd, in Mpumalanga in South Africa.

This prestigious contract, secured by Control Techniques Southern Africa Pty, follows a long history with the steelworks, where Control Techniques drives are the standard for the whole of the plant.

Evraz Highveld is a major iron and steel producer now owned by global company, Evraz Group. Products of the steelmaking plant include billets, blooms, slabs and high grade vanadium slag. The 40-year old billet caster has four strand continuous casting capability and was predominantly DC controlled. All of the switchgear had become obsolete, causing major maintenance problems.

The decision was taken to switch to AC control to give greater accuracy with less wastage and greater overall efficiency. Evraz Highveld approached Control Techniques for

KEY BENEFITS

- INCREASED OVERALL EFFICIENCY
- REDUCED WASTE
- MAJOR MAINTENANCE SAVINGS
- ENGINEERING KNOWLEDGE
- PROJECT EXPERTISE
- EXCELLENT CUSTOMER SUPPORT

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CONTROL TECHNIQUES

a power control solution to this. And the Drive Centre in Johannesburg was responsible for the design, build, installation and commissioning of the 6 panel suite.

The six panel suite, complete with bus bars, 2,000amp incomer, and common drives panels, complete with AC motors, is integrated with Evraz Highveld Steel's existing SCADA system via their Modicon PLC, this was completed with the assistance of their PLC engineers who completed the software side of the project. The suite incorporates a total of 10 Unidrive SP AC drives of 11kW, 15kW and 45kW capacity, a Control Techniques HMI with key pad was installed with each drive to provide full status and diagnostic information for the drive as well as for the line interlocking.

At Evraz Highveld, the steel is transferred from the steel-making process by car and crane to the continuous casting plant via the ladle refining stations where temperature adjustment, desulphurisation and final composition adjustments are carried out. The plant comprises four continuous casting machines; two large twin machines for blooms, one for slabs and one for billets. The four-strand billet machine produces billets from 120mm to 140mm. Each strand has a 15kW, 6-pole motor fitted with force cooling for the withdrawal rolls and these control the billet length. The billets are then moved by roller tables controlled by the 15kW drives and are loaded onto a walking beam conveyor and then onto cooling beds.

Control Techniques Southern Africa is a preferred supplier to Evraz Highveld because of their engineering and project expertise, their ability to provide fast on-site assistance and the local stock-holding. The customer's electrical staff are familiar with Control Techniques AC and DC drives and find them straightforward to use and to programme.

The Unidrive SP 'solutions platform' AC variable speed drive range spans 0.75kW right up to 1.9MW. It is configurable into five operating modes – open and closed loop, vector, servo and regenerating modes. With a range of plug-in module options, its on-board PLC can be supplemented with programmable and specialist feedback and communication modules.