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Tenova Pyromet impresses in US deal

13 May 2008, As proof that Google gives its users their best options, the name "Tenova Pyromet" recently came up when a US-based mining company was searching for a furnace and smelting expert.

According to the base metals product line Director **Hugo Joubert**, Tenova Pyromet recently installed a control system for leading international mining company Freeport-McMoRan Copper & Gold Inc.

Tenova Pyromet development engineer for furnace expert systems, **Wayne Burmeister**, says that the company wanted to upgrade the old furnace controller used on their existing electric settling furnace. The electrodes were originally supplied by Elkem, which doesn't build furnaces anymore. Another company conducted a study and suggested that retrofitting a controller to the old furnace wouldn't be viable.

Burmeister has spent the past two and a half years developing and refining Tenova Pyromet's new generation furnace controller, and was confident that he could meet the challenge of interfacing the controller with the 30-year old furnace.

"This was originally a primary smelter for producing copper. McMoRan Copper & Gold then installed an ISASMELT™ furnace and the six-in-line electric furnace was reconfigured as a settling furnace to separate the Isa copper matte and slag.. The electric furnace previously operated at about 40 megawatts, but now operates at 9-12 MW.

The project was awarded to Tenova Pyromet in October 2007, and Burmeister went to Miami, Arizona to install and test the system, as well as to provide training for McMoRan Copper & Gold personnel. "Because the controls were run manually in the old system, the new generation system allows personnel more time to focus on process optimization, rather than physically operating the controls."

The new control system regulates the power going into the furnace, presently at around 9 megawatts. The control is based on a power set point together with either an electrode current or bath resistance setpoint. Designed to be user-friendly, Burmeister spent a week on installing and fine-tuning the system and another week on training.

Higher recovery rates

Joubert says the results so far have been exceptional. "Issues with the mine's bath build up look set to improve, and the company is already getting better recovery and performance. The electric furnace's primary function is to separate the copper matte from the slag and manual operation resulted in higher copper losses to the slag. The new system has reduced these copper losses and ensured better recovery. A small improvement in recovery has a significant influence on revenue."

McMoRan Copper & Gold operates large, long-lived, geographically diverse assets with significant proven and probable reserves of copper, gold and molybdenum. In choosing Tenova Pyromet, the company partnered with a world-leader in the design and supply of specialist high-capacity furnaces and complete smelting plants.



"While the US market is not a massive one due to environmental restrictions and resource issues," says Joubert, "there are opportunities that we are exploring. This is one of the first six-in-line applications of our new generation of controllers in the USA."

Tenova Pyromet retained Burmeister as its full-time developer concentrating on engineering expert systems to meet client requirements in furnace control. "Over the past two and a half years, we have created a product that enhances our ability and expertise with regard to new furnace projects," says Joubert.

"This has seen the installation of the new generation furnace controllers at Bas Valera in France, IFM, Elchem Solar in Norway, Tata Steel in Richard's Bay, two silicon furnaces in China for Henna Sunshine, two at ASA Metals, and an installation at Anglo Platinum's new furnace."

With projects coming in from across the globe, Tenova Pyromet is taking advantage of its expertise and reputation for projects completed on schedule or early, meeting and exceeding emission control requirements and, above all, the supply of reliable and efficient technology and equipment.