Met-Mex Peñoles Improves Zinc Yield with G2

Met-Mex Peñoles Corporation (Torreón, Coahuila Mexico) is a leading producer and exporter of zinc, silver, and other metals. When expanding business operations compelled Met-Mex to install more equipment and instrumentation, the company's Manager of Process Control, Luis Lozano, began searching for a new control system that would help the company meet both its immediate expansion needs and long-term growth requirements.

After careful evaluation, Met-Mex determined that Gensym's G2®, coupled with Hewlett-Packard data acquisition control units, would be the most cost-effective and flexible solution.

Met-Mex Peñoles' G2-based advanced control system provides operator decision support and on-line control of the zinc refining process—both essential for improving zinc yield. G2 also assists with the diagnosis and control of important process variables (e.g., level, temperature, and flow) and provides supervisory control of raw material feed, separation, leaching, and purification.

Lozano says, "In the past, the raw material feeders were forced to shut down and restart every two or three hours because of the complexity of the raw material. With G2, shutdowns and restarts are less frequent, and there is less wear and tear on the feeder system." Furthermore, the system's self-documentation makes tracking historical data more efficient and accurate. "Before G2, raw material reports were paper-based, so our operators had to look through logs and reports to get process information," says Lozano. "Now, if there is an anomaly in the system, the operator can look at an on-line chart or graph and get a historical perspective on the situation. This helps facilitate good decision making and reduces labor costs."

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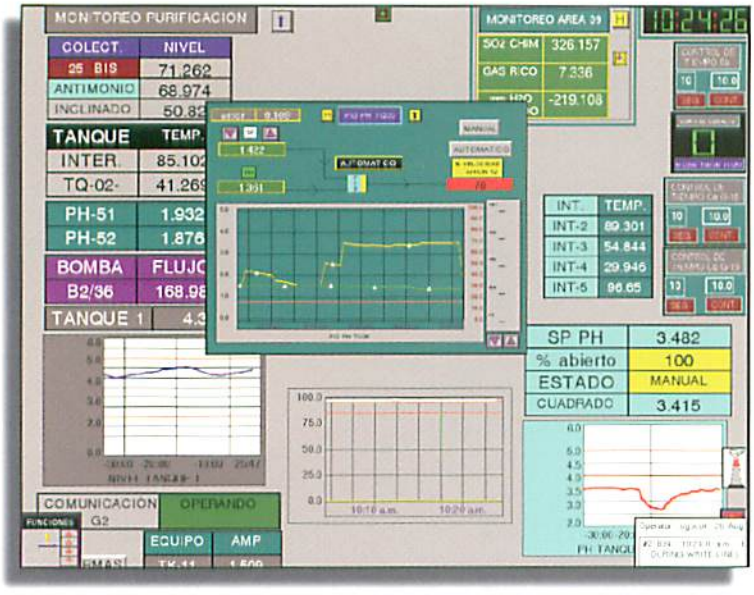
Since implementing G2 in 1993, Met-Mex has improved zinc yields by 10% and cut labor costs by 30%. Zinc yield improvement is directly attributable to G2's ability to control the pH balance during the refining process. In fact, G2 has reduced the percentage variance (around the pH set point) from 50% to 10%. Furthermore, Lozano estimates that the G2 system was 65% less expensive to implement than a traditional DCS.



G2 provides operator decision support and on-line control of the zinc refining process.

With the company's short-term goals satisfied, the Process and Control Department has turned its attention to the long-term goal of integrating the control system with the company's high-level business applications. Over the next three years, Met-Mex plans to implement similar G2 systems in the metallurgic complexes within other Peñoles plants. By standardizing on G2 (Met-Mex now has five G2 systems installed), the company can acquire production data on line, which will aid in cost/benefit analysis and improve business decisions.

"The G2 system is much more than a replacement for a traditional DCS system," Lozano concludes. "G2 provides a means to involve the personnel directly responsible for the operation in the development of the system. It has enabled us to quickly adapt to changes in technology and in the process itself. Today, what we learn about the process becomes incorporated in the system and becomes part of the evolution of the facility."

Problem

- Met-Mex required a new control system to meet expansion needs and long-term growth requirements
- Needed better control over the refinery's critical process variables to improve yields and cut labor costs
- Needed to reduce costly raw material feeder shutdowns and restarts

Solution

- G2 for operator decision support and on-line control of the zinc refining process

Results

- Improved zinc yields by 10%
- Reduced pH balance variance from 50% to 10%
- Labor costs cut by 30%
- Implementation savings of 65% over cost of traditional DCS
- Fewer shutdowns and restarts and less wear and tear on feeder system

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