

APPLICATION UPDATE

PLCs, SCADA, NT enhance packing foam process

Sealed Air's control system for its packing foam process includes Siemens PLCs, Intellution Dynamics iFIX SCADA software running custom batch software from WEI Inc., and Microsoft Windows NT inventory management system.

If you've received a fragile shipment encased in or braced by light, rugged foam packing, you may have Sealed Air Corp. to thank for it arriving undamaged. Sealed Air's protective and specialty products include Instapak polyurethane foam packaging made by its Engineered Products Division (Danbury, Conn.). Instapak consists of two chemicals combined to form a protective foam and equipment for applying it.

Manual to automated control

Ten years ago, the plant was a "glorified filling station" with almost all manual controls, which required extensive intervention by eight employees over two shifts to process and package the foam's ingredients, according to Mark Chateauneuf, plant manufacturing director. The plant's control system was proprietary, based on an Intel RMX processor. It also was cumbersome, prone to crashing, and designed and maintained by only one person.

brook, Conn.). WEI developed Sealed Air's process control and inventory tracking systems.

In 1992, Sealed Air implemented a WEI-developed supervisory control and data acquisition (SCADA) system using MS-DOS-based Fix DMACS software from Intellution (Foxborough, Mass.). In 1997, the Sealed Air asked WEI to implement a SCADA system based on Microsoft's Windows NT.

Three tiers yield results

WEI subsequently designed a three-tiered system. At the control level, it implemented a plant-floor system using three Siemens programmable logic controllers. On the SCADA level, Sealed Air picked Intellution Dynamics iFIX software to run WEI's custom batch management software.

"iFIX uses information from the plant's IBM DB2 database, processes it, and creates the batch. It then starts the process by downloading instructions to the PLCs. iFIX then draws progress data from the PLC and returns the batch record to the DB2 database," says Mr. Westkamper. Intellution's architecture is largely based on standard Microsoft technologies, which simplifies integrating process information with other plant and business systems.

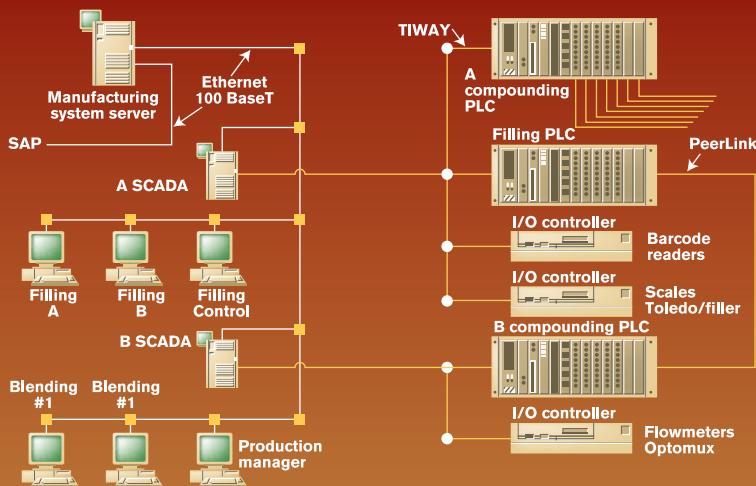
For the third tier, WEI developed a customized Windows NT-based inventory management system that tracks lot codes and records data on raw ingredient receipts, shipping, quality control, batch generation, and tracking. Sealed Air is also planning to tie this inventory management system into its corporate SAP enterprise resource planning system.

"Since implementing the new control, we have a lot better control over our inventory. Our accuracy has improved dramatically," says Mr. Chateauneuf, who adds that inventory variances now average less than 0.5%, far less than previous variances.

The plant's recently improved infrastructure—including dedicated, rather than shared, lines for chemical transfers—provides up-to-the-minute production status data and helps operators track product lots, which allowed Sealed Air to reduce its inventories and further cut costs. iFIX and its renovations also enabled the plant to approximately double its production volume and improve quality without expanding its eight-person staff.

For more information call 800-526-3486 or visit www.intellution.com

Plant Automation Installation for Instapak Manufacturing at Sealed Air Corp.



Source: Control Engineering with data from Sealed Air Corp., WEI Inc., and Intellution Inc.

"We'd download a recipe into the system, but someone would have to manually weigh ingredients and fill out tracking forms. Actual control of the process was done through manual and pneumatic valves and single-loop controllers," says Mike Westkamper, president of WEI Inc. (Old Say-