

Malt-O-Meal Implements Integrated Safety System and Standard Assessment Process to Help Protect Workers and Enhance Commitment to Sustainability

Food manufacturer helps reduce downtime and cut costs with integrated safety system from Rockwell Automation.

Solutions

Integrated Safety Solution

- Allen-Bradley GuardLogix safety system provides safety and standard control in a single package
- EtherNet/IP communications provide seamless, plantwide communication
- Machine safety consulting team provides best practices and technical insight for risk-assessment process

Intelligent Motor Control

- Allen-Bradley PowerFlex variable frequency drives with safe-off provide integrated motor and safety solutions

Partner Network

- Rockwell Automation PartnerNetwork members Wunderlich-Malec Engineering and Werner Electric provide trusted technical support and knowledge

Results

Reduced Downtime and Implementation Costs

- New safety system reduces wiring costs and improves machine-health visibility for faster troubleshooting and simplified maintenance

Streamlined Assessment Process

- Standard-assessment process provides assured risk-level compliance for Malt-O-Meal worker safety

Support of Corporate Commitment to Sustainability

- Safety system helps protect staff and promote culture of sustainability



Malt-o-Meal produces more than 40 different brands of hot and cold cereal, including its namesake brand of Hot Wheat cereal that gave the company its start in 1919.

Background

It's in almost every home, cafeteria, convenience store and hotel breakfast buffet around the globe. And whether you eat it just for breakfast or enjoy an occasional bowlful for dinner, the comforting flavors of your favorite cereal are one of life's simple pleasures.

The family-owned Malt-O-Meal Company, headquartered in Minneapolis, has made that simple pleasure its business for over 92 years. With plants in Northfield, Minn., St. Ansgar, Iowa, Tremonton, Utah and Asheboro, N.C., the company produces over 40 different brands of hot and cold cereal, including its namesake brand of Malt-O-Meal Hot Wheat cereal that gave the company its start in 1919.

From that point on, the company has emphasized low-cost innovation across all aspects of its business. The result: national brand quality and everyday savings for consumers. Today, one out of every nine bowls of cereal served each day in the U.S. is made by Malt-O-Meal.

To produce the majority of its cereal brands, the company uses a series of cooking, forming, puffing, drying and coating steps. After processing, everything is sent through packaging and palletizing procedures before being sent to distribution centers across the country.

LISTEN.
THINK.
SOLVE.®

Challenge

As the company has grown and expanded, Malt-O-Meal's fundamental values have not changed. "We're dedicated to being good corporate citizens," said Scott Kluegel, manager, Corporate Electrical Engineering, Malt-O-Meal Company. "For Malt-O-Meal, that means not only offering quality products at a good value, but also driving all forms of sustainability in our operations – from environmentally friendly packaging to focusing on both worker and product safety."

As a component of driving the highest level of safety throughout its manufacturing operations, Kluegel and his team began to implement changes to their safety control system in 2005. They were motivated by recent updates to the National Fire Protection Association-79 electrical standard for industrial machinery, which required a separate safety system outside the standard programmable automation controller the company had been using previously. "When we implemented the first solution, we used a relay-based system," explained Kluegel. "But after the system was in place, we stepped back and asked, 'Is this the most efficient way to solve this problem?'"

Indeed, the relay-based system was cumbersome to install, not to mention expensive, due to the wiring-intensive architecture. In addition, the solution was somewhat challenging to troubleshoot and maintain, forcing operators to decipher a series of 12, light-based warnings.

"As we started to assess more cost-effective, straight-forward solutions, we also looked at our process for assessing the risk levels of the equipment in our plant," said Kluegel. "Our existing method was somewhat dependent on the discretion of the person doing the review. We wanted to make sure we were all using an identical, consistent methodology that would provide a higher level of assurance for the safety of our employees."

Solution

To update its safety system and risk-assessment process, the Malt-O-Meal team turned to long-time automation partner, Rockwell Automation. "We've worked with Rockwell Automation for over thirty years, and really appreciated the in-depth safety knowledge and resources they were able to provide," said Kluegel. "When we decided to undertake this upgrade project, they were the only company we considered."

For the control system design and implementation, the Malt-O-Meal team partnered with Rockwell Automation and Rockwell Automation PartnerNetwork™ members Werner Electric – a distributor – and Wunderlich-Malec Engineering –



With the new Rockwell Automation system, operators have improved insight into machine operating information.

a systems integrator. Together, they selected an Allen-Bradley® GuardLogix® integrated safety system, which allows for both safety and standard control on a single platform, and provides an easy path for standardization moving forward. "We're installing the GuardLogix solution on each line as the opportunity presents itself, as our standard maintenance practices and upgrade schedules allow," explained Kluegel.

Malt-O-Meal also is updating its motor control solution to an intelligent motor control solution with integrated safety from Rockwell Automation. The company uses Allen-Bradley PowerFlex® 40P adjustable frequency AC drives and PowerFlex 700S AC drives with a safe-off function and standardized motor starters – all of which communicate seamlessly back to the GuardLogix platform via an EtherNet/IP™ network.



The new risk-assessment process offers improved collaboration between operations, maintenance, engineering and Malt-o-Meal's OEM partners for better consistency and increased safety overall.

To standardize the risk-assessment process, the Malt-O-Meal team worked directly with the machine safety consulting team at Rockwell Automation. "The machine safety consulting team met with our team several times to share their experience and best practices," said Kluegel. "We worked with them to customize their standard assessment process to address our specific production environment and safety requirements while driving proactive safety solutions."

Results

Certainly, one of the most important keys to the success of safety-driven improvements at Malt-O-Meal is support at all levels of the business. "Regardless of whether it's related to food or personnel – safety is our number one priority," said Kluegel. "Our culture of safety starts with our CEO Chris Neugent, and continues throughout the company. Knowing that helped us make sure our priorities were focused in the right places."

The Malt-O-Meal team is now sharing its risk-assessment criteria and process with its OEM partners as best practices. This new process also offers improved collaboration between operations, maintenance and engineering for better consistency and increased safety overall.

With the new system, plant operators and maintenance engineers have vastly improved insight into machine operating information, which has helped ease troubleshooting. "With the relay-based system, we had to rely on a series of lights to identify and solve issues," said Kluegel. "With the new machine, all alerts and operational data are plainly available on the operator interface, which significantly reduces the amount of time it takes to diagnose and fix any problems that arise."

The Malt-O-Meal team believes the new safety solution will also help reduce costs, as compared to the relay-based system. "We're waiting for a greenfield project to measure the actual dollar savings, but we're confident we'll see reduced wiring costs and, since everything is running on EtherNet/IP, faster installation time versus the old system," said Kluegel.

The Malt-O-Meal team is already looking ahead to other areas of sustainability they can support in their manufacturing environment. They have started using Rockwell Software® RSEnergyMetrix® technology to get a baseline on current energy consumption, to help identify areas for possible improvements.

Ultimately, creating an environment of collaboration has been a major contributor to Malt-O-Meal's safety successes. "We gathered a great group of internal experts, and partnered with leading external resources to make sure we were doing this the right way, right from the start," said Kluegel. "Rockwell Automation and its partners have always been great technical resources for us as we look to continuously improve our manufacturing processes and deliver the best value possible for our customers. We definitely plan to continue those relationships in the future."

The results mentioned above are specific to Malt-O-Meal's use of Rockwell Automation products and services in conjunction with other products. Specific results may vary for other customers.

Allen-Bradley, GuardLogix, PowerFlex, Rockwell Software and RSEnergyMetrix are trademarks of Rockwell Automation, Inc. EtherNet/IP is a trademark of ODVA.

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846