



Case Study

When Sealed Air required a migration from their legacy PLC systems and an update to their electrical systems, they turned to Astec Solutions to ensure a rapid turn around with minimal downtime



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In-depth processes

Sealed Air has manufactured products in the UK since taking over Cryovac in 1998. Inheriting several packaging sites, the American company has since undertaken a process of transformation to focus its production for the future. The existing sites now concentrate on creating Barrier Lines, a plastic film used extensively in food packaging.

There are several in-depth processes required to produce their goods, including one which sanitises the film to ensure the product is sterile and ready to perform its role in the food industry. However, the sites creating these products have mature technology, and as such the supporting system architecture was leaning towards obsolescence. Thanks to Astec's proven track record in providing control system upgrades with significant upsides and minimal disruption to production, Sealed Air approached the company to discuss the project further.

The first driver for an upgrade was the utilisation of PLC equipment long past its end-of-life phase. As the plant's manufacturing equipment was well maintained, Sealed Air's main concerns were derived from the significant risk posed by PLC failure as no spares would be easily available. The second driver was a desire to be forward thinking in electrical safety, ensuring modern standards and certificates were secured for the foreseeable future.

Safety Standards

In undertaking the groundwork for the Sealed Air project, Astec identified the need to achieve PAScal Verification relating to the safety elements of the control system. Here the two main drivers for the project were interlinked, as an updated control system alongside refreshed hardware would provide the perfect solution to the joint goals of Sealed Air.

In bringing their control system expertise to the table, Astec appointed trusted partner IC Electrical LTD to undertake the required electrical work. This approach allowed for Astec to remain as a single point of contact for the entire project. In addition to this partner, well-respected safety company Pilz provided safety concept reports and detailed analysis of the proposed changes to the system which produced the Barrier Line product.

As the latest project in a collaboration with Sealed Air stretching back 20 years, Astec were in a unique position to action the upgrade. With experience of both the site and the legacy Allen Bradley equipment to be replaced, the project was made all the more straightforward and an approach was designed to ensure a successful outcome.

Legacy upgrade

Starting with the hardware upgrade, the legacy system was replaced with the modern, market-leading PLC equipment from Rockwell Automation. The latest Rockwell ControlLogix PLC components, which include comprehensive safety features served the needs of the project perfectly.

In addition to the PLC upgrades, the aging CRT HMIs in use were also replaced with the latest Rockwell products. Communications were greatly improved by the installation and implementation of ethernet throughout the facility, including a significant upgrade of the variable speed drive units.

With a significant volume of IO across the entire plant's processes, including the coating area, substrate and racker, it was important that the upgrades were in place and functioning as soon as possible. As such, the customers were able to witness the FAT off-site, to ensure that processes would run correctly once in situ.

Running alongside the system upgrades was an update to the site's electrical distributions boards for the production area. Astec and IC Electrical worked together to complete the commissioning of the entire project on time despite the implementation of the first national lockdown measures against COVID-19.

As part of the national supply chain to the food industry, production of Barrier Lines is critical. As such the project needed to be completed in the original timescale. Astec and its partners were able to rise to this unique challenge and the project did not suffer any delays.

Minimal downtime

The upgrade project for Sealed Air has allowed for the maximisation of the original equipment installed when the factory opened, increasing the site's ROI considerably against more costly upgrade paths. As the manufacturing process continues to be safe and serviceable, both Astec and Sealed Air were happy to be able to facilitate its further use and as such prevent the increase in carbon footprint associated with transporting and installing new machinery.

Alongside modernised PLC equipment, control panels were replaced and upgraded from the aging interfaces which were in place since the plants original opening in the early 90s. Thanks to IC Electrical the site is now set to continue to meet safety and electrical standards for the foreseeable future with a much simpler process to conduct routine maintenance.

With the commissioning complete, the plant has been running at full speed ever since. Astec are proud to be a significant part of the project, and to deliver such a successful outcome for Sealed Air.

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