Automatic Feed Co. of Napoleon, Ohio, engineers and refurbishes handling equipment that uncoils the steel and converts it to stacks of defect-free blanks. It supplies automobile plants on nearly every continent. When Automatic Feed retrofitted the controls of a plant line in Russia, it used Siemens’ services. The result was a solution its customer can rely on. The blanks line includes seven components that must work together in precision. Tim Barry, senior engineer at Automatic Feed, says, “Siemens helped us engineer a drive solution without any major problems. We had almost zero failures and were able to meet our original ship date.”

“SMART” Engineering

For the automation of the line Siemens’ Totally Integrated Automation (TIA) was used. Automatic Feed uses modular technology through its Standardization and Modularization Action Resource Team (SMART). This includes a Distributed Device Architecture (DDA) rather than centralized control. This speeds communication and reduces cabling costs and points of failure. The Automatic Feed team also leveraged the Simotion D motion controller, which integrates control capabilities directly into the drives to yield a compact, highly scalable system. The processing power and memory in the Sinamics S120 drives provided the performance necessary to support the distributed architecture. Drive-Cliq technology offered further benefits for the engineering team and customer alike. An Ethernet-like backplane based on a 100 Mb/s serial interface, Drive-Cliq automatically validates components and captures nameplate data, simplifying integration and replacement.

More for the money

The Siemens solutions reduced space requirements in the enclosures by as much as 25 percent. That is a significant benefit in the factory environment, where space is always in short supply. Another benefit was the ability to switch languages on displays “Other projects had significant cost associated with converting screens,” says Barry. “With the multi-language support built into the Siemens HMI, we can create a Russian database to mirror our English database, and switch between the two languages with the touch of a button.” Automatic Feed has become a believer in Siemens. Says Barry, “We established a strong level of comfort with Siemens very early on in the project. We are using their solutions more, especially offshore.” As to the retrofit, they could not be happier with the results. “The major benefit is that it is more of an open architecture, which makes it easier for us and the end-user to maintain and troubleshoot,” says Barry.

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The design in steel handling line leverages Simotion machine controllers and Sinamics drives for a distributed control architecture that minimizes wiring.