



Blending Safety and productivity

Many people incorrectly assume that combining safety with productivity becomes harder as machines become more complex and automated. This is an incorrect assumption, as explained in this case study where a solution was devised to remove the operator from the high-risk recoil machine area of a One Steel company whilst maintaining productivity.

BY FRANK SCHREVER

It's often a requirement of many manufacturing processes to have the operators become directly involved in the machine action at the unloading point, either to unload or secure the outbound product. Unfortunately, the out feed of most processes are notoriously dangerous, so in reality we should be striving to remove the operators from the area at all times.

The ability to combine safety and productivity is highly evolved these days but many still incorrectly think it gets harder and harder as machines become ever more complex and automated. Recently, however Marcus Blaik of AM Electrical managed to prove to his customer, Coil Coaters of Arndell Park in Sydney, that indeed blending safety and productivity can be done easily and cost effectively when you use the right solution.

Coil Coaters is a One Steel company which specialises in coating of steel coils for use in guttering and many other architectural applications. Once the coil has been coated, it is rewound into coils on large re-coilers ready for dispatch.

History has shown that the recoiling step in the coating process has had a number of hazards, most notably entrapment of the nearby operators in the coil. Although no injuries had been reported, One Steel's risk assessment procedures had identified this as a high priority to guard against.

A concept was devised to remove the operator from the recoil machine area by installing an automated roller door. However, the operator still needed access to secure the completed roll and to extract the coil for shipment. This meant that the operator needed to enter the hazardous area and have the ability to jog the recoiler so he could strap and remove the coil easily.

Mr Blaik from AM Electrical was asked to supply a solution that allowed access and control, yet did not expose the operators to the identified hazards. Mr Blaik's first phone call was to Pilz Safe Automation, and after scoping the solution, in consultation with Derrin Drew from Pilz, a solution using the PNOZ Multi with speed monitoring module was put in place.

"The PNOZ Multi gave me so much flexibility to set zero speed detection, jog speed and over speed that the solution actually became really simple," Mr Blaik says. "All we needed to do was wire in the encoder feedback in the Multi and the rest was done in the configuration. "

Interfacing into the existing Siemens S7 PLC on-site was done with safe out-puts from the PNOZ Multi which would not allow the PLC to go into full speed, and if the PLC failed and an over-speed condition was detected, the Multi would remove power from the large recoiler drives directly. In combination with PSEN Code gate switches mounted on the recoiler entry door, the Multi safely guaranteed that the operator could never access the machine while at full speed, and yet allowed the operator to safely jog the machine so he could remove the coil for shipment.



Mr Blaik became a big fan of the Pilz solution by the end of the project. "PNOZ Multi was straightforward to install and programme, and had all the functionality straight from the box to complete this application, in fact, with one Multi and one speed monitor we were able to independently monitor two recoilers, which saved us a great deal of money and time."

Also impressed with the solution was Arthur Crampton, Operations Manager for Coil Coaters. "It just works! We run these machines 96 hours at a stretch without stopping, so we don't have the luxury of taking a recoiler offline to troubleshoot."

This application proved the PNOZ Multi is as convenient as it is powerful, and with the range of additional modules available, including analogue inputs and networking, there is hardly an application the Multi cannot handle. And when installed by well trained technicians, it becomes a safe and productive solution for any machine.

For more information on either ~~the PNOZ Multi~~ or how to accurately risk assess your machine please call Pilz Safe Automation on (03) 9544 6300. www.pilz.com.au

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