Never afraid to be a leader or spend on its mills, Green Bay Packaging opted for a new ABB control system to improve quality and eliminate maintenance issues.

Green Bay Packaging (Green Bay, Wisconsin, USA) recently found itself in a situation familiar to many mills. Its automation systems were ageing (20 years plus) and different components had been acquired from various suppliers. This made it increasingly difficult to operate and troubleshoot not to mention the problem of trying to find spare parts. It was time as Doug Vandenberg, operations manager, Green Bay Mill Division, says, to “get something more uniform, more reliable and with an ease of maintenance.”

Although quality was not a problem, the mill is always striving for continued improvement. “Over time, things were getting older and obsolete,” Vandenberg says. “We needed to increase our productivity, but to do so we needed to continue to improve quality.”

“There were a lot of issues,” adds electronics and instrumentation superintendent Richland Allen. “There was a lack of communication between the systems. We had to reset the linear steppers too often. We would lose our mapping and get choppy profiles. We needed a unified source/system.”

Operators were spending too much time maintaining the scanner. Also, calibrating the individual actuators was a problem connected with the communication issue.

System 800xA was the answer
Vandenberg says the mill started working on the project in 2008-2009 and it was approved in early 2010. The mill turned to ABB for the solution. The scope of supply included an System 800xA Version 5 QCS with network platform, automatic grade change and coordinated dryer control as well as new System 800xA hardware for the ABB 4-in. linear steppers.

With a Harmony connect, the system was interfaced to the existing MD actuators for speed, weight and moisture controls. Additionally, the System 800xA system was interfaced to a new ABB Air Water Profiler for CD moisture control and existing CD weight actuators for CD weight control.
The new system was a standalone project for the mill other than a shower upgrade. The equipment was installed during the course of normal shutdown. The mill was able to install some pieces such as the Air Water Profiler during an earlier shutdown so maintenance and operations crews were able to complete the work in one day instead of the two scheduled.

Other work connected to the project such as the water supply system, piping, consoles, installing the hardware and software could be done when the mill was running. “The only thing left for the crews to do was take out the old scanner, install the new one and do the final tie-ins,” explains Allen. “They were able to do it all in about 12 hours.”

Green Bay Packaging produced saleable paper after three reels. With 30 minute turn-ups, this means the mill had saleable paper 1.5 hours after startup.

There were some specific objectives that the mill wanted to achieve. “We wanted to make a unified platform and increase production by improving our quality with better moisture profiles,” says Vandenberg. “We wanted to eliminate the upsets and be more reliable.”

According to Vandenberg and his team, the goals have been met. They credit the in-house engineering group for being critical to the success of the project.

The old moisture control system had 42 rows of four nozzles each. Maintenance was a tough task. Now, there are 56 rows with one nozzle per zone and air atomized showers. The water goes where it should. All the actuators are automated; previously, the mill was often forced to run in a manual mode.

One of the things that helped get the project approved was the promised steam savings. In terms of cost, actual steam savings are projected to be about USD 0.5 million, or just over 8%, far above the 2.25% guaranteed.

Other improvements have come in bone dry weight CD control 2 sigma, moisture CD control 2 sigma, break recovery times, MD weight and moisture. Some training was done at ABB in Columbus, OH. Four operators were sent there to see what they were getting. They had some input into the operating procedure. Training was also done in the mill so when it came time to startup, there were no surprises. The operators are very happy overall, adds Allen. “They trust the system.”