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The Martin N2 Position Indicator monitors conveyor belt cleaners, relieving employees of having to physically visit them, and delivers real-time data via cell phone to improve process efficiency and personnel safety.

PHOTO: MARTIN ENGINEERING

there is a lack of experienced personnel or plants running below capacity to the extent that around-the-clock staffing isn't viable, they only make sense if they are more than just multiple control desks for different plants in one single room, according to Fluck. And, operators must be able to control a whole group of different plants with heterogeneous control systems as if they were physically on-site. "The whole concept is only economically feasible if the underlying control systems don't need to be modified or replaced, and the existing communication infrastructure can be used," he says.

As for industry trends, the power market has been moving toward smaller power generation units, Fluck says, and for small, distributed and mostly unmanned systems like biomass and bioenergy plants, it's crucial to ensure equipment is running smoothly and can be serviced from a central location, or even operated and monitored remotely. "The SPPA-T3000 is a very scalable DCS, not only for large-scale plants with tens of thousands of signals, but it can be scaled down to meet the needs of the different plant sizes, including smaller systems like biomass plants," he says.

Smart Bulk Handling Breakthroughs

When Martin Engineering was founded in 1944, it set out to become a global innovator in the bulk material handling industry by developing new solutions to common problems while improving safety and productivity. A quarter of a century later, the company's products, sales, service and training are available through 19 factory-owned facilities worldwide, with 1,000-plus employees and wholly-owned business units in dozens of countries. And, the company's series of *Foundations* books is an internationally-recognized resource for safety, maintenance and operations training, with more than 20,000 print copies in circulation around the world.

One of Martin Engineering's latest innovations is its Martin N2 Position Indicator, which the company describes as a "game-changer in the industry, with a positive impact on productivity, operating costs and safety."

The device, used to measure the wear of a conveyor belt cleaner blade, wirelessly provides information to a plant operator or service technician. "Plant personnel no longer need to guess at how long the cleaner blade will last, or to physically visit the cleaner to check blade wear," says Paul Harrison, chief technology officer at Martin Engineering. "So, for example, maintenance shutdowns for blade changes can be planned with much greater certainty. Optionally, knowing that a blade may not last until the next planned shutdown, an operator may decide to replace a blade before its useful surface is completely consumed, understanding that he would have had spillage otherwise because the blade would not have lasted until the next planned shutdown."

Knowing when a blade requires changing means one does not have to have as many spares on hand just in case, Harrison says. "The potential for reduced carryback—because blades are tensioned and replaced at the right time—has significant cost savings attached to it. These productivity gains lead to lowered operating costs."

Eliminating the need for blade inspection reduces the time maintenance staff need to spend near the conveyor. "To be hurt by a conveyor, one needs to be near a conveyor," Harrison says. "The only time access is needed is during bladertensioning or replacement."

In another move toward "smarter" material handling, Martin has introduced an automated pneumatic tensioning system for belt cleaners. "The N2 Twist Tensioner does everything the N2 PI does, but also maintains the tension on the blade, enhancing the game-changer benefits of the N2 PI," Harrison says. "The benefit of automated or powered tensioning is increased data output for greater predictability, more precise and consistent tensioning, reduced wear and reduced labor for daily monitoring and periodic adjustment."

Equipped with sensors that confirm the belt is loaded and running, the system automatically backs the blade away during stoppages or when the conveyor is running empty, minimizing unnecessary wear to both the belt and cleaner blade, Harrison adds. "The result is consistently correct blade tension with reduced power demand on startup, all managed without operator intervention."