Kistler-Morse®

Sonologic Products

case history

Market: Bulk Aggregates

CUSTOMER

Associated Sand & Gravel operates a 300-acre quarry and concrete pipe manufacturing plant in Everett, WA. The company is owned by CSR America, one of the top five aggregate suppliers in the United States.

PROBLEM

Associated Sand & Gravel wanted to automate its bulk inventory and processing operations. However, the complex workings of the site did not lend itself to a simple off-the-shelf solution. For example, the site makes five different products (building sand, state sand, pea gravel, 3/4 inch rock, and 1 1/4 inch rock). There are 10 different piles of raw materials at the site, along with 23 product silos and many conveyor belts. Any number of problems could slow down the site's operations. For instance, some conveyor belts move material at a rate of 500 tons per hour. A malfunctioning gate on that belt creates a mess that not only stops production but is difficult to clean up. And in the past, operators would too often send materials into the wrong silo.

APPLICATION

The company installed Kistler-Morse Sonologic transducers to monitor product levels in each of its 23 silos. (Each silo spans 12 feet in diameter, and measures from 24 feet to 50 feet tall.) Kistler-Morse worked with a third-party systems integrator to provide complete process control, signals, alarms and shut-offs on the 23 silos and nine important conveyor belts. These features warn operators about potential production-busters: a silo gate that isn't fully open; material that's too wet and not flowing properly; a conveyor that's snagged; or perhaps a conveyor with too much slack in it. (This last problem also poses a fire hazard due to heat build-up).

BENEFIT

According to Dale Surdyk, Facilities Manager for Associated Sand & Gravel, he's been able to save on labor costs. "I used to have people starting and stopping the conveyors manually," Surdyk says, "Now it will run all day labor-free. And it doesn't make mistakes. We don't have materials being fed into the wrong silos. And we're saving money because we're cleaning up a lot fewer spills. Those take a long time to clean up."

CONCLUSION

The system's software operates in a user-friendly, Windows-based environment. Working with the ultrasonics, the color graphics tell operators and management exactly which material is flowing from which pile into which silo. If a manager wants to change production flow, he uses the mouse to "point and click" -- indicating the material he wants to flow into a given silo. With the level-indicating and control system, the site produces in excess of 700,000 tons per year.

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