Kistler-Morse®

Sonologic Products

case history

Market: Mining and Refining

CUSTOMER

J.A. Jack & Sons, Inc., limestone crushing plant in Seattle, Washington. The company supplies various grades of limestone to glass manufacturers, roofing companies, feed mills and lots, and asphalt companies.

PROBLEM

J.A. Jack & Sons was occasionally experiencing bottlenecks in an important limestone flour silo measuring 60-feet high by 40-feet in diameter. In addition, the company was looking for new ways to monitor levels of crushed limestone in four 320-ton granular silos. All of the silos are made of steel. The company previously used old-fashioned plumb bobs to monitor limestone levels in the flour silo, but "the plump bob was very inaccurate," says Jerry DeGuise, Operations Manager for J.A. Jack.

APPLICATION

DeGuise turned to help from one of Kistler-Morse's manufacturers reps, because of previous success in using Kistler-Morse's Microcell strain-gage sensors. This time, they experimented with using Kistler-Morse Sonologic transducers for level-indicating. "There were some real problems when we first looked at putting equipment in the silo," DeGuise says. "For one thing, because of the way the silo is filled, the limestone flour is laying at a 22-degree angle, and that creates a void (blind) area for the (level-sensing) device. And there's some support structures in the silo."

Both the blind area and support structures present problems for normal application of ultrasonic level-indicating equipment. But in this instance, DeGuise and Kistler-Morse's rep came up with a custom solution: 1) The Sonologic transducer was positioned on a standpipe two feet away from the side of the silo; 2) The Sonologic unit was wrapped in sound-absorbing foam to prevent reading of unwanted false echoes from the silo's walls; 3) The unit was positioned at a 22-degree angle, so that it was aimed at the limestone flour's angle of repose.

BENEFIT

With the adjustments, DeGuise says the Kistler-Morse Sonologic transducer is accurate to within 1.0% of the material's true level.

CONCLUSION

"That particular flour silo is critical to us," DeGuise says, "If the silo fills up completely, then we have to shut down. If I know it's close to being full, then I can make adjustments on the equipment and production hours to compensate." Now, with proper level readings from the Kistler-Morse unit, DeGuise is able to adjust his operations and avoid production bottlenecks. The site produces in excess of 750 tons of limestone per day.

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