Optech

measurement at the speed of light

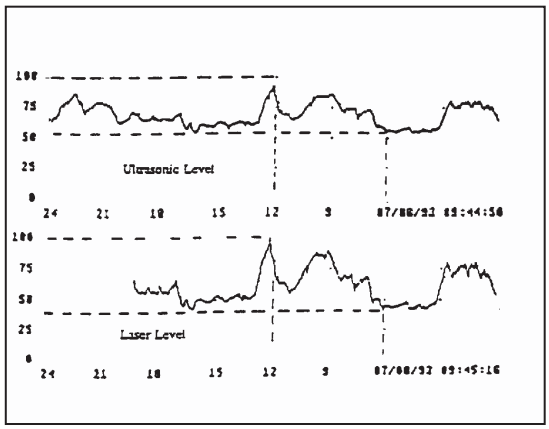
PRODUCT APPLICATION NOTE
SN0101

Industry:	Electric, Gas and Sanitary Services, Primary Metal Mining, Petroleum Refining and Related Industries
Application:	Bin monitoring
Optech Equipment:	SENTINEL 3100
Application Description:	The customer required a sensor to monitor the level of ore in a feed bin.

Optech installed its SENTINEL 3100, a NEMA 4 laser level monitor, at a large resource company operating a mine and processing plant. The company required a remote method of monitoring the level of ore discharged into a feed bin holding about 18,000 tons. During continuous operation, feed rates can vary between 7,000 and 8,000 tons per hour. The level of ore in the bin must be precisely monitored, since it can change very rapidly if feed rates or plant requirements change. The company compared an ultrasonic unit and the SENTINEL 3100. Both units were mounted directly above the bin, aiming down into the center of the ore pile. The results are shown in the figure below. Although there is an excellent correlation between the two sensors, the SENTINEL 3100 shows more definition. For example, at the 12 hour mark the SENTINEL 3100 reported the bin to be 100% full, while the ultrasonic unit reported the bin to be 92% full. Similarly, at the 6 hour mark the SENTINEL 3100 correctly reported a lower bin level than the ultrasonic unit. The company was enthusiastic about the results and currently has several units in operation.

KEY ADVANTAGES OF LASER TECHNOLOGY IN LEVEL MEASUREMENT

- Measurements unaffected by temperature variations
- Measurements can be made through very narrow bins
- Measurements can be made at very sharp angles to the surface
- Measurements can be made in moderate amounts of dust
- Measurements unaffected by background noise
- Non-contact measurements
- Short setup time with no calibration required
- Highly accurate measurements



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