Novel Technology Provides On-line Measurement of Particle Size in Individual Cyclones: Barrick Cortez Case Study

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In minerals processing plants, the particle size distribution of the cyclone overflow is an important parameter and can be viewed as the product of the comminution process. Too coarse of a product will likely have poorly liberated valuable minerals and make downstream recovery difficult. Too fine of a product may represent a missed opportunity to increase plant throughput. A novel and robust technology utilizing acoustic signal processing enables on-line measurement of the particle size in the overflow of individual cyclones. The system is based around a wetted sensor design with no moving parts and provides a real-time trend of the desired target grind size parameter. The system does not require sampling and associated sample transfer piping that is prone to plugging, thus avoiding high maintenance requirements.

The CYCLONEtrac Particle Size Tracking (PST) system offers significant advantages over what is considered standard equipment in the industry and is successfully deployed at multiple large concentrators. This paper describes the installation and results of the latest CYCLONEtrac PST design installed at the Barrick Cortez operation in Elko, Nevada.