The Application of Ultra Fine Grinding for Sunrise Dam Gold Mine

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ABSTRACT

The Sunrise Dam Gold Recovery Enhancement Project was an upgrade project to the existing process plant with the objective to increase gold recovery.

The project required the existing screened cyclone overflow to be redirected into a new flotation and ultra-fine grinding circuit, producing concentrate up to a rate of 400,000 t/a. Metso Outotec supplied the flotation, thickening and ultra fine grinding technology, namely 6 x TC200 Flotation Tank Cells, 1 x 14m High Rate Thickener and 1 x HIGmill HIG3500/23000. At this point in time the HIGmill is the largest stirred mill supplied into a pyrite concentrate regrind duty.

This paper discusses the test work and subsequent machine sizing, the challenges of commissioning and ramp-up, including methods of resolution. We also discuss the success of the on-going operation with a focus on continuous improvement and optimisation, grinding energy efficiency performance and scaleup, as well as the process operational performance.