

Perancangan dan Instalasi Sistem Alarm Dan Digitalisasi Agitator Tangki Pelindian Emas Pt Antam Tbk, Ubpe (Unit Bisnis Pertambangan Emas) Pongkor, Kabupaten Bogor, Provinsi Jawa Barat = Design and Installation of Alarm System and Digitalization for Agitator in Gold Leaching Tank PT Antam Tbk, UBPE (Gold Mining Business Unit) Pongkor, Bogor Regency, West Java

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Abstrak

UBPE (Unit Bisnis Pertambangan Emas) Pongkor merupakan salah satu unit bisnis milik PT Antam Tbk yang bergerak dibidang pertambangan emas dan perak yang berlokasi di desa Bantar Karet, Kec. Nanggung, Kabupaten Bogor, Jawa Barat. UBPE Pongkor melakukan pengolahan emas dari bijih emas hingga menjadi dore bullion dimulai dari proses crushing, milling, leaching, carbon in leach (CIL), elution, electrowinning, smelting hingga backfilling. Beberapa alat produksi yang digunakan seperti jaw crusher, cone crusher, ball mill, leaching tank, elution column, dan burner kiln. Pada leaching tank dan carbon in leach (CIL), terdapat agitator sebagai alat bantu agitasi bijih emas dan larutan reagent berbahan garam sianida agar proses leaching atau pelindian bekerja secara optimal. Bijih emas dan larutan reagent yang tidak teragitasi dalam waktu lama akibat trip pada agitator menyebabkan pengerasan pada endapan. Sehingga proses perawatan dan perbaikan tertunda akibat perlu dilakukan pengurasan tangki. Sebelumnya, kondisi trip pada agitator tidak diketahui oleh operator dan dibutuhkan sebuah sistem baru yang dapat melakukan pendeteksian dan melakukan monitoring secara langsung pada performa agitator. Dengan melakukan perancangan dan pemasangan sistem alarm dan digitalisasi agitator sebagai alat bantu pendeteksi trip dan monitoring, kondisi dan performa agitator dapat dipantau untuk mencegah terjadinya pengerasan endapan pada tangki pelindian sehingga dapat mencegah potensi kerugian yang diterima perusahaan akibat penurunan nilai recovery emas.UBPE (Gold Mining Business Unit) Pongkor is one of business unit from PT Antam Tbk operating in gold and silver mining, located in Bantar Karet Village, Nanggung, Bogor Regency, West Java. UBPE Pongkor produces dore bullion from ore through several process such as crushing, milling, leaching, carbon in leach (CIL), elution, electrowinning, smelting, and backfilling. All the process using equipment such as jaw crusher, cone crusher, ball mills, leaching tanks, elution columns, and burner kiln. In the leaching tank and carbon in leach (CIL) process, agitator is used to stir the ore and cyanide-based reagent solution so the leaching process working optimally. Unstirred ore and cyanide in the tank due to agitator trip, can cause the mixing sediment to harden which delays maintenance and repair processes as the tank should be drained. Agitator trip condition can't be detected by operators and there should be a system which capable detecting and directly monitoring the agitator's performance. By designing and installing an alarm system and digitalizing the agitator as a trip detection and monitoring tool, the condition and performance of the agitator can be monitored to prevent the mixing sediment hardening in the leaching tank. So, it could avoid potential losses for the company due to gold recovery value drop from the process.