Implementation of studded roll bodies for raw material HPGR grinding system

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The Oro Grande plant located on Route 66, 80 miles northeast of Los Angeles, CA, was commissioned by thyssenkrupp Industrial Solutions (tkIS) at the end of 2007. Since the acquisition of the plant in 2015, CalPortland has lead several modernization projects, among which is the partnership with tkIS to implement the studded wear protection for their High pressure grinding rolls (HPGR).

This HPGR is employed in the raw material finish-grinding system together with a static dryer and a dynamic high-efficiency separator. In 2018, the roll bodies were upgraded from standard wear material to a studded design, which has a longstanding history in minerals and mining applications, but has not been explored well enough in the cement industry. Since the commissioning, the studded wear protection has shown increased system reliability and availability, enhanced performance, and reduced maintenance. Visual and quantitative wear evaluation has shown very little wear on the rolls. Since the startup, roll surface has required little maintenance when compared with the old rolls. Instances of unscheduled maintenance around the raw grinding system has notably decreased.

This paper will review the project implementation and discuss operational advances, maintenance improvements and rolls wear life.