The endemic issue of ball mill overload in an SABC circuits

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ABSTRACT

Maintaining the work balance between the primary SAG mill and secondary ball mill(s) is an overlooked bottleneck, and thus opportunity, in an increasing number of circuits worldwide. As circuit capacities are expanded by 'releasing' the SAG mill bottleneck, the work is progressively passed on to the downstream ball mills. This tends to be absorbed as a coarser grind and usually the consequential reduction in recovery, until it is dealt with through addition of extra milling capacity. However, there is abundant opportunity to rebalance the circuit in advance to recover recovery and open up additional grinding capacity across the circuit.

Common causes of loss of milling efficiency are addressed, along with practical techniques to identify mill overload, supported by plant data showing capacity gains in excess of 10%. Routes to redressing the ball mill overload are provided.