Metalock Engineering UK

Press Information

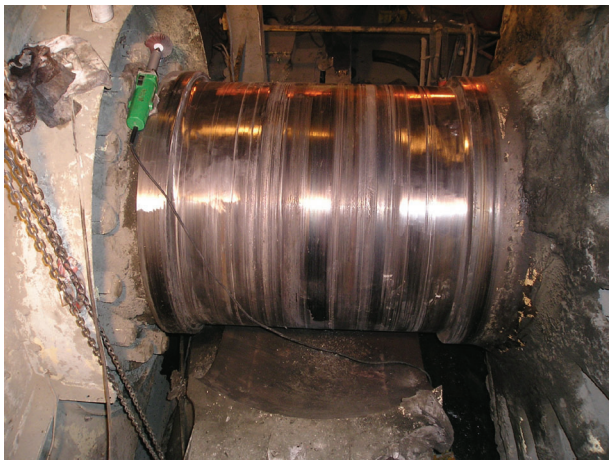
METALOCK CEMENTS RELATIONSHIP WITH LAFARGE FOLLOWING TWO MILL JOURNAL SHAFT RESTORATIONS

Using its orbital turning equipment and expertise Metalock Engineering UK has saved Lafarge Cement a great deal of downtime and expense by recovering in-situ a large diameter journal that had become severely scored following the breakdown of a white metal bearing.

The 914mm diameter journal was 914mm long and part of a cement mill at Lafarge's Dunbar Works in Scotland. The mill could have been dismantled and the journal components transported for remachining but as the mill building is totally enclosed this option would have involved removing the roof to extract to journal component. Instead, Metalock Engineering went to work and completed the recovery task in-situ in less time than it would have taken to dismantle the mill journal assembly.

This was achieved by setting up their purpose-designed orbital turning cage on an undamaged radius section and setting a datum from which the journal could be machined to clean up. Following this a polishing operation was carried out, using the same orbital device whose tool head revolves around the shaft as opposed to the shaft rotating, followed by tooling adjustments to remachining the radii at the ends of shaft to blend in with the new diameter. The radii were then lightly polished. Once the new diameter had been determined a new white metal bearing was cast and machined by an outside company and refitted by Lafarge. The cement mill was then successfully re-commissioned.

Following the solution to the Dunbar problem, there was a similar occurrence on an oxide mill at Lafarge's Westbury Works in Wiltshire. Metalock Engineering was called in and carried out a similar operation on a shaft of similar dimensions to Dunbar. However, due to damage to the shaft seal areas these had to be hand dressed, welded to above nominal diameter then orbital turned to restore original dimensions. On completion the orbital equipment was reset using the restored diameters as datums and the main journal machined to clean up. Subsequently, all the machined surfaces were polished. A new white metal bearing was produced to suit the revised diameter, fitted and the mill re-commissioned into service.



Severe scoring following breakdown of the white metal bearing

After machining to clean-up using orbital turning techniques

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