

Press Information

METALLOCK'S ORBITAL TURNING EXPERTISE SAVES VALUABLE DOWNTIME FOR SE ASIAN GENERATOR

Rather than unthread and carefully transport the 13 metre-long rotor shaft from a 110 MW GT8 generator to workshops 300 km away to have a scored journal area machined, a South East Asian company called in Metallock Engineering UK recently to orbitally machine the damaged shaft in situ.

The 400mm diameter by 380mm long journal had become scored due to a serious bearing failure. As a result of Metallock's expertise, the machining operation was completed in half the time it would have taken using the alternative means.

To provide access to the damaged shaft area, the bearing covers were removed. This allowed Metallock engineers to evaluate the situation with the rotor in-situ. The bearing was then completely removed and the shaft supported so that Metallock could set up its orbital turning system to machine the damaged area on the journal diameter and the thrust face. Some 6.8mm of material was removed using the technique, with equipment designed and manufactured by Metallock UK. With orbital turning, the tool is rotated around the shaft instead of the shaft being revolved past a stationary tool. Areas of the rotor shaft that were not to be machined served as bearing locations for the pneumatically driven orbital turning cage, which revolves on bearings at each end.

On completion of the machining, the journal was inspected and found to be parallel, round and concentric within 0.01mm with a finish of 4 to 6 CLA. While this work was progressing the old failed bearing pads were flown back to the UK, remetalled and machined to suit the new journal dimensions. They were then returned to the station for fitting and the generator reassembled ready for recommissioning.



The orbital turning machine, designed and manufactured by Metallock Eng UK, rotates the tool around the shaft instead of the shaft being revolved past a stationary tool.

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