

CASE STUDY

OEM QUALITY MANAGEMENT ON FAST-TRACK PUMP REPAIR PREVENTS POWER STATION OUTAGE

- Unplanned power outage avoided
- Third party installation errors corrected
- · Pump restored to OEM performance standards within 10 days

CHALLENGE

A ClydeUnion Pumps (CUP) advance class boiler feed pump at a conventional power station in Africa was exhibiting unacceptably high levels of vibration following an overhaul by a third party repair centre.

The power station utilises two 50% duty pumps with one 50% standby unit. Immediate action was required to correct the vibration issues on the boiler feed pump, because any further breakdown or issue with one of the other pump trains in the system would result in a power generation outage.

ClydeUnion Pumps reviewed the vibration data and determined there was a significant rotor unbalance. It was recommended that the pump should be used as a standby only unit until repair could be carried out at the next scheduled two-week shutdown. The customer agreed and asked ClydeUnion Pumps to strip, investigate, repair and rebuild the pump in a ten day turn around.

SOLUTION

The pump was taken to our approved service centre in Johannesburg, where the strip down, repair and rebuild process was performed to our Quality Management System (QMS) under the close supervision of a technical support engineer from CUP's head office in Scotland. The QMS ensures the pump unit is rebuilt to 'as new' OEM standards and includes:

- · Dimensional check on all critical dimensions
- Quality plans for the strip down, rebuild and repair of every component
- Strip down and rebuild reports

The unit was stripped down using the quality plans and dimensional check sheets within the QMS system. The rotor was built up and, as per the quality plan hold points, the concentricity and balancing checks were witnessed by the customer. The vibration problem was traced to the rotor, which was severely imbalanced.

The journal and thrust bearings were found to be damaged so they were re-metaled as per CUP standards. The unit had also been built without using the correct jigs so some additional adjustment of components was required to ensure a correct build.

When the unit was returned to site, ClydeUnion Pumps supervised the insertion of the cartridge and assisted when the on-site engineers missed a crucial step of the installation process.



OCLYDEUNION® PUMPS

Industry:	Power - conventional
Region:	Africa
Category:	Service Centre overhaul
API Type:	BB5

ClydeUnion Pumps Aftermarket Technical Services team has experience across a range of services on critical rotating and reciprocating equipment to improve operational safety, reliability and efficiency. The drop-in replacement of two original Bryron Jackson pumps for the oil and gas market is one of our success stories documented in our library of case studies. These case studies highlight the requirement from the customer, how we achieved the goal and the process we followed to deliver the improvements.





ClydeUnion Pumps diagnosed the cause of the vibration problem, rebuilt and returned the pump to the client within the 10 day timeline. We further ensured that the unit was correctly reinstalled. The unit was commissioned when the boiler came back online at the end of the 14 day shutdown and the pump ran with normal vibration and temperature levels.

As the boiler feed pump OEM, we were able to apply our product knowledge, Quality Management System and processes to return this pump to service quicker, at lower cost and to design standard first time. This fast track project returned the pump to full operation, which in turn protected the customer's power generation capacity.

FINANCIAL ILLUSTRATION

The financial advantages of utilising the OEM is demonstrated in this case study where using the OEM's product knowledge, Quality Management System and processes have returned this pump to service quicker, at lower cost and to design standard first time. This fast track project returned the pump to full operation which in turn protected the customer's power generation capacity.





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