

Independent investigation ensures plant availability

Snapshot

Client

Power generation company, South America

Challenge

Our client called for an independent investigation after a failed valve head resulted in high exhaust temperatures and forced the shutdown of a gas-fired power plant.

Solution

Acting as owner’s engineer, we carried out an independent failure investigation including forensic analysis of failed components. After identifying the cause we positively engaged with the original equipment manufacturer (OEM).

Benefits

The damaged asset was repaired by the OEM and an appropriate inspection regime ensured fleet availability and the timely replacement of components as required.

Maintaining power plant availability is fundamental for any operator. When a key component failed, we acted as a trusted adviser to our client, investigating the cause rapidly, presenting conclusive findings which led to repair and future replacements at no cost to our client and minimum disruption to availability.

In warranty review

After the forced shutdown of a gas-fired internal combustion engine due to high exhaust temperatures, inspection of the combustion chamber revealed a failed exhaust valve head. We were asked to conduct an independent analysis, investigating potential errors in design, manufacturing or operational parameters which would be covered by OEM warranty.

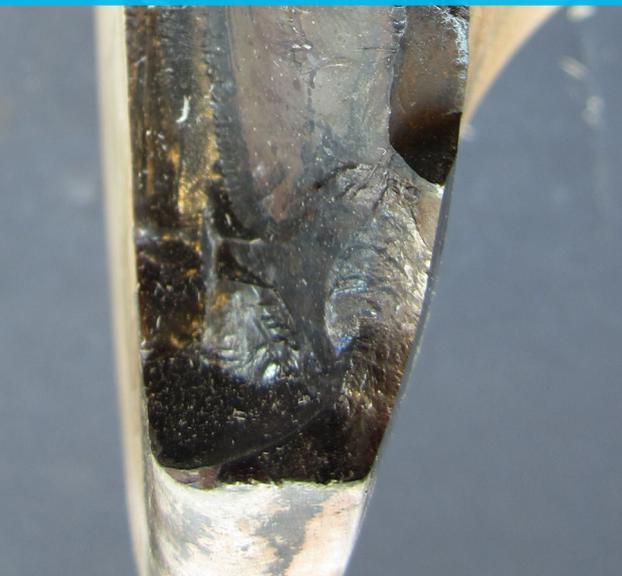
Our client had confidence in both the impartiality of our investigation and our credibility to challenge the OEM with the results of the investigation.

Gas engine failure cause identified

Our experienced materials engineers carried out forensic investigation of the failed components in our in-house metallurgical laboratory. We then combined operational and engineering experience to identify the root cause after analyzing manufacturing data as well as data from the failure investigation.

We concluded that fatigue cracks had developed in the exhaust valve heads as a result of pre-existing subsurface defects in overlay welding which occurred during the original manufacturing process.

We were able to engage effectively with the OEM resulting in modifications to the production process and repair of the damaged asset. We endorsed an inspection regime proposed by the OEM to ensure the availability of our client’s fleet, allowing component replacement, where required, to be carried out without impacting availability, within warranty and at no cost to our client.



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