

IN-PLACE JOURNAL MACHINING RESTORES DAMAGED SHAFT FOR NEW CONSTRUCTION STEAM TURBINE - HOLLAND

HITACHI TC4F STEAM TURBINE JOURNAL REPAIRS

A newly designed power plant, Maasvlakte Electrabel, owned by GDF Suez situated in the harbor of Rotterdam, suffered a bearing failure during operational testing in December 2013. The bearing failure resulted in damage to the turbine shaft that required repair before testing could continue. The power plant, which runs 50% on coal and 50% on Biomass, needed to be in operation in December 2013.

Goltens Rotterdam was contacted to complete an inspection and to make a repair proposal. Goltens reviewed the damage and determined that the repair could be completed in-place using Goltens' in-situ journal machining tools.

After several meetings with representatives from the turbine manufacturer and power plant management, Goltens provided a demonstration of the tooling in the workshop in Rotterdam and was awarded the job.

IN-PLACE STEAM TURBINE MACHINING SCOPE:

- Inspection of journal damage including magnaflux and hardness checks
- In-situ machining of the 610mm turbine shaft journal to remove surface damage (removed 1.20mm of material from the shaft diameter)
- Machine polishing to a surface roughness of 0.12Ra

IN-PLACE STEAM TURBINE RESULTS:

Goltens' in-situ machinist completed the job to the satisfaction of the technical representatives and the power plant. The job was completed within three days time and the plant was able to continue toward full operation.

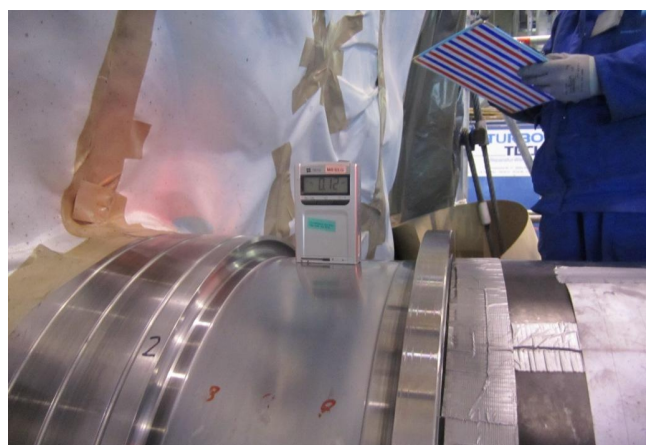
PROJECT FACTS: GDF SUEZ – STEAM TURBINE

Turbine Manufacturer:	Hitachi
Turbine Model:	TC4F
Generator Output:	800 MW
Turbine RPM:	3,000 rpm
Turbine Type:	Tandem/Compound
Shaft Diameter:	610mm

Manufacturer reps observing equipment set up



Turbine journal machining in progress



Finished journal surface polished to 0.12Ra