



PearlStreet

POWER INDUSTRY CASE STUDY

POWER GENERATION TURBINE INSPECTION

SERVICES: Inspection, Engineering & Materials Consulting, Shutdown Planning & Execution

THE CHALLENGE

The asset owner required one of its 350MW power generating turbines, fuelled by a coal fired boiler, to be brought offline and inspected within a 4 week period.



PEARLSTREET'S INVOLVEMENT

PearlStreet was given the responsibility of inspecting a number of the boilers heat exchanger tubes and hot reheat pipe. The inspection incorporated a variety of techniques including magnetic particle inspection, ultrasonic inspection, hardness testing and microstructural evaluation (replication metallography).

The task was larger than normal due to the hot reheat pipe being on the critical path. PearlStreet met the requirements by putting together an experienced team in excess of 20 technicians and engineers.

The team of technicians inspected 100% of all circumferential and longitudinal welds of the hot reheat pipe by fluorescent magnetic particle testing followed by a comprehensive regime of ultrasonic testing utilising a number of different probe angles.

In addition to non-destructive testing, in excess of 350 metallographic replicas of the welds, heat affected zone and parent material were produced and reviewed. All tested sites required careful polishing to a fine mirror finish to facilitate the replication process. To contend with some difficult positions and contamination from dust each replica took approximately 2 hours to complete.

The job was completed in a timely fashion with excellent results.

BENEFITS

- Complete condition assessment of the boiler and hot reheat pipe
- Plant back on line per schedule