POWER CASE STUDY

Unit Superheater Engineering (USE) undertook an extremely challenging repair and upgrade of two high pressure steam drums for the HRSG's at a CCGT plant in Runcorn, Cheshire.

The adopted approach was to remove both drums from site utilising a Liebherr 1750 ton crane with superlift, and transport each 120 ton drum back to USE's engineering facility. From initial access to reinstallation, all mechanical work was completed safely and on time despite an extremely challenging schedule.

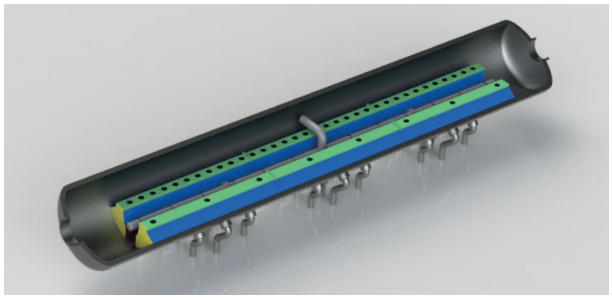
The Client opted for an off-site approach, as previous comparable repair works undertaken by others in situ had taken almost twice as long, and at a substantially higher cost and greater risk to personnel carrying out the works.

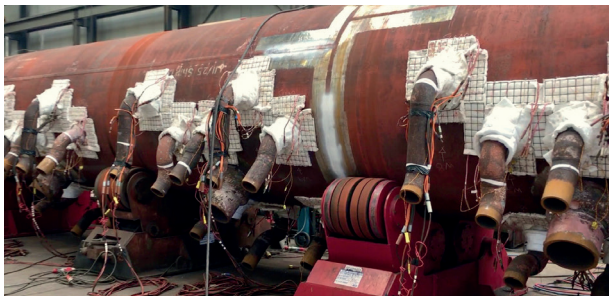
Benefits of USE off-site solution

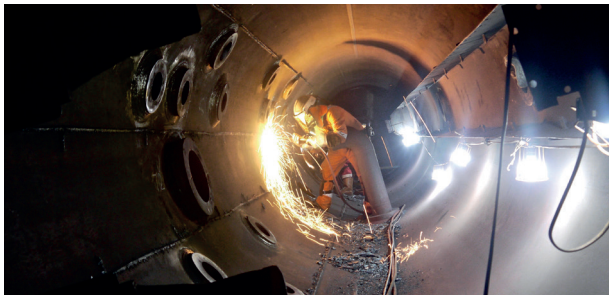
- **Substantial reduction in plant downtime**
- **Significant savings in direct cost**
- **Drum-rotation assisting oxy-fuel excavation**
- **Flux-cored Arc Welding (FCAW)**
- **Replacement internal furniture fabricated concurrently alongside drum repairs in workshop avoiding schedule delays**
- **Post Weld Heat Treatment (PWHT) reduced from 230 to 90 hours per drum by utilising LPG fired burners rather than electrical resistance elements previously used in situ**
- **Safer and more controlled working environment**

Whilst USE's site construction team carried out all Risk Assessments and Method Statements, including detailed crane studies, prior to removal of the drums, USE's off-site project team in South Wales carried out preparation work required to receive them. This included the design and manufacture of bespoke support saddles, necessary to ensure a safe and controlled working environment.

Non-destructive testing of the existing welds confirmed the need for repair work to both drums; each 15m long, 2m diameter with 121mm wall thickness. Having completed an extremely challenging lift to remove the drums from the 22m level of the HRSG, they were transported to Swansea and offloaded using a hydraulic four-point lift system.







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