

UTILITY BOILER REVERSE ENGINEERING FOR RABIGH, SAUDI ARABIA

UNIS Power has participated within boiler operational improvement project for Rabigh power plant in Saudi Arabia where six HFO fired boilers, each with steam output capacity 900 t/h, is installed.

Originally designed boiler economiser heating surface (ECO) was suffering by non-uniform water distribution, which was leading to permanent overheating of exposed parts. UNIS Power was challenged to re-design the critical part including necessary modifications of feed water distribution path. All was including necessary boiler system hydraulic calculations and modelling. UNIS Power then fabricated and delivered the new ECO heating surface parts including modified headers and connecting tubes.

The project was especially challenging due to missing original boiler drawing documentation. Thus complete reverse engineering had to be processed at the site including proper interface alignment to existing components. Totally 72 pieces of ECO blocks for 2 boilers were successfully supplied via Babcock Borsig Service Arabia who was responsible for dismantling and erection of the new blocks.

All components have been delivered at full customer satisfaction and in accordance with the project schedule, which led Saudi Electric Company to apply for another two boilers option.

All the equipment has been supplied in full compliance with ASME standards and local customer requirements.



Client

Babcock Borsig Service Arabia Ltd / Saudi Electricity Company

Year of Completion

2014

Boiler data

- 4 x 900 t/h
- 132 bar(a) superheated steam
- 38 bar(a) reheated steam
- 541 °C
- crude/heavy fuel oil fired boiler

UNIS Power scope of works

Reverse engineering and re-design including detail drawings, manufacturing and site delivery of ECO heating surfaces blocks, inlet headers and connecting tubes



ECO module loaded on a truck



ECO inlet header within fabrication



Packed ECO modules at a workshop



ECO inlet header within fabrication