

CASE STUDY

Industrial Power Generation

Moody Heat Exchangers
Brings Plate Heat
Exchanger (PHE) Back to
Specification for one of the
UK's Largest Power Stations



Overview

One of the largest power stations in the UK, fired by natural gas, utilises large and powerful plate heat exchangers to make the most effective reuse of process heat. One of these heat exchangers is vital in ensuring that sea water is efficiently cooling down demineralised water. The water is then used to cool down process equipment throughout the power station.

Unfortunately, this PHE was found not to be performing to its design specification. The power station called Moody Heat Exchangers for expert advice and our recommendations.

Our Approach

After contacting Moody Heat Exchangers, one of our engineers attended site and identified the cause of the problem. Our engineer found a pressure drop on the sea water side of the PHE and determined the demineralised water wasn't being cooled to the correct temperature.

The 12 ton PHE was removed from the site and shipped to Moody Heat Exchangers' state-of-the-art refurbishment facility in Retford, Nottinghamshire, to undergo a complete service overhaul.





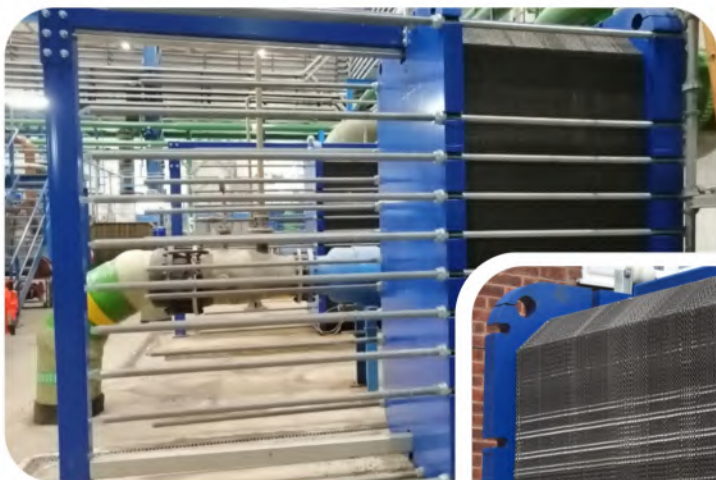
Optimisation

Once received at our refurbishment centre the first stage of servicing took place. The PHE was fully dismantled to enable our experienced engineers to facilitate inspections.

Full inspection of the frame and non-destructive testing of the port liners took place and the process of plate refurbishment began.

This included; removing old gaskets from the plates, chemically cleaning the plates to remove scaling and contamination, visual inspection of the cleaned plates, UV crack detection to test plates for the smallest deformities and finally, supplying and fitting new gaskets to the plates that passed final inspection.

Following the refurbishment process, the PHE unit was recommissioned and underwent a final pressure test in accordance with the OEM design specifications. After successfully passing these tests, the 12 ton PHE was loaded onto transport and successfully shipped back to the power station.



Results

Once the PHE was re-installed onsite, it was tested in production and found to be performing better than ever, meeting its original design specifications.

The customer was issued with all the required documentation including the pressure test certificate, expertise reports and photographic documentation of the problems identified during the service procedure. These provided details of the cause of the pressure drop, and how it was resolved to achieve the desired heat transfer efficiency.



Summary

One of the UK's largest power stations was experiencing problems with a large plate heat exchanger (PHE) that was not performing to its design specification. After Moody Heat Exchangers arrived on site, they identified that the PHE was losing pressure, which was causing the PHE to perform inadequately.

The 12 ton PHE was transported to Moody Heat Exchangers' refurbishment facility where it underwent a complete service overhaul and refurbishment. Following this process and final testing, the unit was successfully delivered back to the power station. Once re-installed the PHE was once again performing to the original design specification, to the customer's delight.