

Mobile Solutions Solve a Commissioning Problem, UK Power | Case Study

The Client

A major electricity supplier installed a new 1300MW Combined Cycle Gas Turbine (CCGT) power station with three gas turbines and a high pressure heat recovery steam generator (HRSG) which generates steam to drive a steam turbine. The new system generates enough electricity for approximately 1.5 million homes and is helping to meet the demand for lower carbon, secure and efficient power generation. The HRSG requires 50m³/h of demineralised makeup water.

In order to minimise the impact on mains drinking water supplies and to ensure a sustainable water supply, the water is drawn from the local river.

Key Figures

- New high efficiency CCGT power generation facility
- Ineffective pre-treatment of river water caused demineralisation plant failure
- AQUAMOVE provided improved pre-treatment

The Client's Needs

The river water was pre-treated prior to demineralisation using a conventional cation-anion-mixed bed ion exchange system with intermediate degassing. During commissioning the demineralisation plant failed to meet the required 0.1µS/cm conductivity specification and the problem was traced to a high total organic carbon content in the river water.

The pre-treatment process provides good removal of high molecular weight humic acids but not the lower weight fulvic acids. These passed into the ion exchange plant causing organic fouling and a resultant high conductivity which threatened the commissioning programme and ongoing plant efficiency. The Project Manager had previous experience of a similar problem and knew exactly what to do: he called Veolia Water Technologies AQUAMOVE team.

The Solution

The AQUAMOVE team provided two 25m³/h MORO mobile reverse osmosis units to treat the filtered water, removing the traces of organics and reducing the total dissolved solids (TDS) concentration prior to demineralisation.



This not only solved the organic problem but also reduced the operating costs of the demineralisation plant whose regeneration frequency was reduced as a result of the lower TDS. The MORO units remain on site on a long term hire agreement, while the Client assesses the feasibility of a new permanent reverse osmosis plant.

The Benefits

- Fouling problem eliminated
- Commissioning completed according to programme
- Reduced demineralisation plant operating costs

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