

Application of our newest desuperheater (attemperator) technology in the RWE power plant Ibbenbüren

The increasing part of renewable energies in the power generation of Germany leads to a necessary transition to more flexible gas-fired and combined cycle power plants. The power plants have to react very fast on the frequently changing network load with frequent start-up and shut down processes and load change. The efficiency of new or renewed power plants could be increased by temperature conditions higher than 550°C up to 720°C. Under these more pretentious conditions the high pressure- und reheated steam has to be controlled efficient and fast.

To comply with these raised demands, TEC- artec GmbH has developed together with



Siemens/Vienna and Beuth University/Berlin, a new multistage controlled superheated steam attemperator (desuperhater) without any movable parts in the steam tube. This new development called TECtemp HT gets realized at the RWE power plant in Ibbenbüren, in progress of a planned revision, for the first time.

In case of Ibbenbüren, the special improvements of the TECtemp HT could be achieved because of 20 controlled injection nozzles, which are regulated through a single control unit. All movable parts are placed outside the high temperature zone. The separately and individually controlled nozzles create the enhanced and rapidly control with their very fine spray within the entire load range of 0.5 – 40 t/h. Based on that, the TECtemp HT achieves an control range up to 1:2500 and operates as a control and regulating valve at the same time.

Because of the very fine spray formation, even at low load cases, the fall out of condensates can be decreased clearly. With a decreased fall out of condensates, the impact on installed thermo shock pipes and run walls gets essential reduced and allows an extended service life. Further benefits of the new system are the improved accessibility at inspection and significantly shortened down times. Thus, maintenance work without blocking the steam flow can be carried out. With the TECtemp HT, 40 nozzles at the maximum, all in all 60 t/h cooling water can be applied here.

With the new developed desuperheater, TECartec is impressively able to fulfil the increased demands of the power plants operators referring to efficiency, controllability, service life and costs.

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