

Sunny Success for Tranter in Spain

Tranter International AB has supplied and commissioned plate heat exchanger (PHE) equipment for Europe's largest solar thermal power facility. The PHE performs vital oil cooling for the steam turbine's main bearings, ensuring that this critical unit functions efficiently and reliably, with the added benefit that it can easily be cleaned or even enlarged in any future upgrades. The installation has a total collector surface of 1.1 million square metres and is situated on the Guadix plateau in Andalusia.

Tranter has been involved in a number of solar thermal projects managed by Siemens Industrial Turbomachinery AB leading to a good knowledge of the application and a high level of technical support. Unlike welded or brazed heat exchangers the construction of the unit means it is possible

to perform mechanical cleaning of the heat exchanger – it is also extremely flexible and can be adapted to any future requirements as the plant grows in capacity. The lubricant in the steam turbine is cooled using water which is recycled from a cooling tower installation. The plant came into operation in 2008.

The main element of the parabolic trough power plant

is a solar field which provides steam for a conventional steam turbine. It consists of numerous parallel rows of solar collectors, arranged along a north-south axis and following the path of the sun from east to west. The reflectors consist of parabolic mirrors made from an extremely transparent, silver-coated glass compound which concentrates the incident solar radiation onto an absorber pipe in the focal line of the collector. The absorption pipe contains a heat transfer medium - a temperature-stable synthetic oil in a closed circuit that can be heated to temperatures of up to 400 degrees Celsius. Until now, parabolic trough technology is the only large-scale solar power plant technology that has proven reliable over a long period of time.

There is a growing acceptance in industry of the importance of maximising heat conversion efficiencies for environmental as well as economic reasons. Tranter continues to lead the way by offering a wide range of gasketed and welded heat exchangers that deliver cost-effective efficiency for pressures and temperatures up to 100 bar and 900°C.

Compared to shell and tube, these compact, plate-type units typically take up only a tenth of the installed footprint and save weight, material and maintenance costs and they have proven performance in feed water heating, condensing, thermal isolation circuits, component cooling and many other applications.

