

Company wins licence to manufacture for Shell

LOCAL engineering company PSV Services is to manufacture swirl tube separator assemblies under licence for Shell Global Solutions International, becoming only the second company worldwide to manufacture these Swirl Tube Assemblies.

The assemblies are central to Shell's highly effective third-stage separator (TSS) technology, widely acknowledged as the foundation of effective flue gas emission management in oil refineries worldwide.

Hydrocarbon cracking processes making use of the technology are able to reduce atmospheric particle emission to less than 3mg/Nm³. The regulatory limit is 50mg/Nm³.

Strict quality controls are a characteristic of all TSS manufacturing processes.

Only after a factory inspection confirmed the PSV Services' advanced manufacturing procedures and very high quality standards, was the manufacturing licence awarded.

The inspection took place in February.

Primarily a supplier of pumps, pump spares and valves to water and slurry operations at mines throughout Africa, PSV Services' experience with large, reputable multinational companies promised a good fit with Shell GS, whose third stage separator (TSS) process was developed in the 1960s to complement two-stage regenerator cyclones as an additional stage in refinery particulate removal.

Ongoing design improvements have since extended applications to include particulate emission control, and the reduction of the solids load to the wet scrubber.

Acting as protection for the expander blades and other downstream components, TSS technology reduces both the operating and maintenance costs of the entire flue gas system.

Efficiency depends particularly on the mid-section of each TSS, where the swirl tube separators to be manufac-



APE Pumps' MD, Peter Robinson, left, and Alan Sternsdorf, technical and sales director, APE Pumps.

ured by PSV Services are grouped. Here, their axial-flow swirl vanes generate a spin velocity fast enough to separate particulates from the gas.

The particulates discharge to a hopper, while the cleaned flue gases reverse direction and flow to the discharge outlet via the central outlets of the swirl tubes.

Vane shape, alignment and finish are essential contributors to effective swirl tube performance, in which the vanes direct particulates away from the tube surface, eliminating the need for the ceramic liners of the original design.

Cast in 305H stainless steel, the accuracy of the vanes is in turn dependent on the quality of patterns and moulds, aspects of manufacture to which Shell GS paid particular attention during the inspection in February.

PSV Services' contract with Shell is expected to lead to other high specification contracts with multinational customers.

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