

LEAN ACID GAS BURNERS AND TAIL GAS INCINERATORS FOR CLAUS SULPHUR RECOVERY UNITS

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South Pars in Iran is one of the biggest gas fields in the world.

The phases 2 and 3 of South Pars development have been successfully commissioned and are now in production.

The sulphur recovery units include equipment supplied by KANGWON BOILER, notably the four reaction furnaces with their recovery boiler and two tail gas incinerators.

PILLARD supplied the four acid gas burners, the four auxiliary burners (for reheating the process gas before flowing through the second stage reactor) and the two tail gas incinerator burners. PILLARD also designed the incinerators and established the fabrication drawings for KANGWON BOILER.

The reaction furnaces are supplied with very lean gas of which the H₂S content is comprised between 21,36 and 31,66 % vol. only.

The design of the PILLARD acid gas burners combined with a specific location on the reaction furnaces, ensures a very stable reaction zone even with a very low H₂S content, with no need for oxygen enriched air. Nevertheless, it is necessary to continuously feed the acid gas burners with a sustaining fuel gas support in order to maintain a sufficient temperature inside the reaction furnace. The design of the burners ensures a complete oxidation of the hydrocarbon components to prevent pollution of the catalyser.

KANGWON BOILER and PILLARD co-operated for the commissioning of the sulphur recovery units and from the beginning up to the completion of the project, the relationship between both companies has been fruitful and positive.

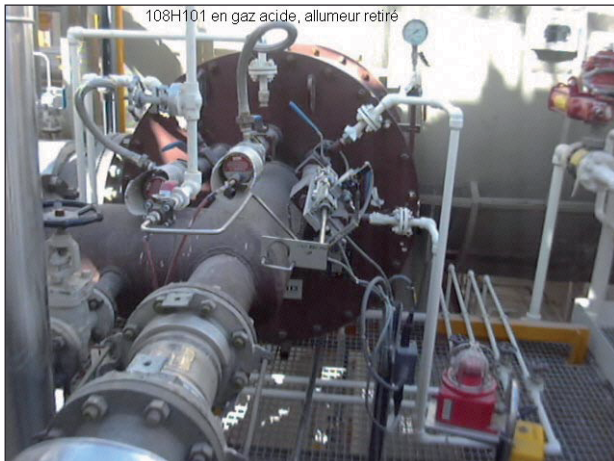


Fig.1 - Acid gas burner, 9 280 (n)m³/h of lean acid gas

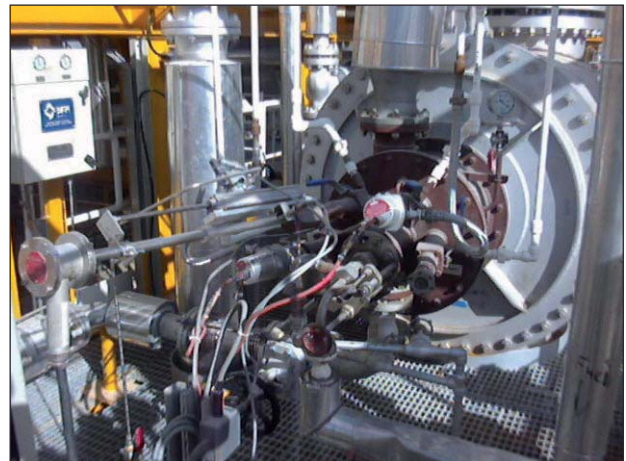


Fig.2 - Auxiliary burner, Acid gas or fuel gas fired



Fig.3 - Incinerator burner, Fuel gas fired



Fig.4 - Incinerator package, 34 380 (n)m³/h of tail gas

New development

KANGWON BOILER and PILLARD are now supplying similar equipment for the phases 4 and 5 of South Pars development. It must be noted that the capacity of these new units is higher than those of units 2 and 3 since the acid gas flow is 13 800 (n)m³/h (instead of 9 280 (n)m³/h) for each acid gas burner and the tail gas flow is 53 340 (n)m³/h (instead of 34 380 (n)m³/h) for each incinerator.

The commissioning of the phases 4 and 5 is scheduled for the end of 2004.