

# Fuel gas compression

## Total Fina Elf & Agip consortium, Iran

The offshore Balal gas platform is powered by its own gas supply, so the gas turbine generators require an extremely reliable, stable supply of compressed fuel gas. This package includes fuel gas compressors and aftercoolers.

- 3170kg/hr (2.57 MMSCFD) of fuel gas, from 1330kPaG inlet pressure to 2650kPaG discharge pressure
- 2 x 100% reciprocating compressors, Ariel JGM/2
- 2 x 100% air-cooled aftercoolers (146kW) & oil coolers

Fuel gas is to be of low oil content and cooled from more than 110°C to a controlled setpoint of 55°C. VSDs were used for control of the aftercooler fans.

Pulsation dampeners are incorporated to suction and discharge piping, following the outcomes of a pulsation study in accordance with API618.

Reliability of the compression system is critical to the operation of the gas platform and therefore redundant equipment and control systems were supplied whilst maintaining a small footprint. Both packages included dedicated PLCs with watchdog communications enabling the standby system to be fully operational, delivering full flow at pressure, within 11 seconds of a fault being detected in the corresponding unit.

The system operates at all load variations all year round, from 100% to 0% capacities, offshore in a corrosive environment in the Gulf, in Iranian waters. Due to the hydrogen sulphide (H<sub>2</sub>S) content in the gas stream, materials are NACE certified for sour gas. All equipment is suitable for use in a Zone2 hazardous area.

The equipment was certified by DNV and delivered within 28 weeks from order, including the factory string test witnessed by Total Fina Elf and DNV in Sydney. The equipment was further run tested on-shore in Singapore before finally being commissioned in the Gulf by RE personnel.



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