

Case Study

Particulate removal

Technology
for a
sustainable future

Application

QAFCO (the Qatar Fertiliser Company) operates the world's largest ammonia and urea production site at Mesaieed City, Qatar. The QAFCO 5 expansion project is a \$3.2 billion investment to expand capacity to help meet the increased demand from agriculture. It is scheduled to come on stream in 2011. Each of the QAFCO plants uses highly explosive high-pressure natural gas from offshore as the principal raw material for the ammonia and urea production. However the natural gas is contaminated with H₂S that corrodes the pipework, and entrained particles that form scale. These contaminants must be removed from the gas stream prior to downstream processing.

To accomplish this critical gas cleaning role, ERG supplied two specially designed high-pressure venturi scrubbers to remove >99.5% of particulates. The QAFCO 5 scrubbers are constructed from 25mm thick 316L stainless steel and certified to 48 bar, ASME VIII Div 1. Each system is capable of conditioning 90,000Nm³/hr of natural gas. This successful installation follows the earlier QAFCO plants 1 to 4 which also included high pressure venturi scrubbers provided by ERG's wholly-owned subsidiary APC Process Engineering.

System description

Each system incorporates a venturi scrubber and dis-entrainment vessel with a built-in mist eliminator. The venturi is supplied with scrubbing liquor from the vessel's integral sump tank by duty and standby recirculation pumps.

The systems are supplied skid-mounted complete with ladder access, and are fully piped, wired and tested prior to dispatch.

Equipment description

- Design codes: ASME VIII, Div 1 venturi and dis-engagement vessels
- Design pressure: 48 bar (vessels tested to 62 bar)
- Design temperature: 84°C
- Materials: 316L stainless steel vessels, galvanized carbon steel skid and ladder, all painted for tropical, coastal environment
- ATEX: system not CE marked (not required since export outside of EU), though all component parts certified to zone 2, EEx 'd' as a minimum.

Year: 2010

Value: approx €900k

For further information, or to discuss your application, contact:

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