Dew point control - propane refrigeration

Hayan Petroleum Company, Syria

This dew point control unit formed part of a gas treatment plant at a greenfield site in Syria. Our client was looking for a system to be fully integrated into their overall package, and to maximise use of their own in-house fabrication facilities, so RE designed and engineered a complete propane refrigeration unit, but supplied only the main equipment such as compressors, associated oil pumps, and drives, plus other critical components such as oil separator internals and control valves. In addition, RE provided a design package of drawings and data sheets for inclusion into our client's overall system design.

- Hydrocarbon dew point control unit
- Inland desert area, Zone 2 hazardous area
- 740 kW refrigeration capacity, to maintain the gas dew point temperature at -5°C
- K-shell kettle type shell & tube gas chiller
- 2 x100% screw compressors
- Air-cooled condenser
- Capacity control to enable load variations from 100% to 0%.

The system is air-cooled, but must cope with wide temperature ranges from a site minimum ambient of -10°C at night in winter, to over 45°C in summer. The low ambient when combined with a low load situation could cause operational difficulties, so air control louvers were included on the condenser, as well as other special considerations in the design and PLC programming.
The refrigeration unit was commissioned by RE's skilled representatives at site in cooperation with the client's commissioning team.

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