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VAPOUR RECOVERY UNIT

CLIENT



Project: Yuri Korchagin FSO Project

Location: Caspian Sea, Offshore

Delivery: 2008

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LUKOIL, CASPIAN SEA, RUSSIA

Large amounts of vapour can be lost during the handling of crude oil. On this floating storage and offloading facility, Lukoil was interested to recover the vapour to minimize loss of a valuable product, as well as for emission reduction. Our client asked for an economic case to be made for vapour recovery, as well as the environmental case, and was pleasantly surprised when addition of a VRU could be justified economically as well as on “green” grounds.

- Offshore on that “Yuri Korchagin” FSO
- 350m³/hr of hydrocarbon and N₂ cooled to -40°C to recover 90% (by weight) of C₄+ hydrocarbon
- Emission level <350 g/m³ of hydrocarbons (incl. C₁ & C₂)
- Two stage vapour cooling from +30°C to -40°C followed by reheat stage to +10°C for energy recovery
- Stolway Exd hermetically sealed scroll compressors
- Dual vapour condensers for continuous operation and automatic defrost, with stainless steel tubes and aluminium fins for long life.

The recovered product is separated from condensed water, and is pumped back to the storage tanks. The system operates at all load variations all year round, from 100% to 0% capacities, with ambient as low as -20°C. Automatic start-up and control is via a skid mounted PLC which is housed in an Exp panel.

The system can be monitored and controlled locally via the control panel pushbuttons and colour display screen, plus network communications enabling monitoring and control from the control room. Remote assistance is also available from REI offices around the world via the network communication.

The skid structure was load tested, and the complete system certified by American Bureau of Shipping for use in a Zone 1 hazardous area.



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