Phoenix equipment corporation

Plant # 405

# 13,200 Nm3/hr Syngas Plant for Sale

**Maximum Capacity**
H2: 10, 000 $Nm^3/h$
CO: 3,200 $Nm^3/h$

**Minimum Capacity**
H2: 3, 000 $Nm^3/h$
CO: 1,000 $Nm^3/h$

**Product Purity**
99.99%

**Process Technology**
Linde

**Plant Area**
6,500 $m^2$

**Plant History**
1991 – Commissioned
1998 – Major process upgrade
2002 – Major process upgrade

**Major Equipment**
Desulphurization reactors / vessels
Steam reformer
CO2 compressor
CO compressor
Syngas compressor
Tail gas compressor
Gas separation cold box
PSA system
TSA system
CO expansion turbine
CO2 removal

**BRIEF PLANT DESCRIPTION**

The Syngas Plant operates on natural gas basis to convert methane with water steam into hydrogen and carbon monoxide. The plant was commissioned in 1991. Technical upgrades were conducted in 1998 and 2002. Now the plant is still in operation. The pressured natural gas feed is treated with transition metal catalyst and reactive agent to remove sulfur. Together with steam the cleaned feed gas is optionally pre reformed to convert higher hydrocarbons. The resulting richgas is converted via steam reforming process and carbon dioxide to carbon monoxide and hydrogen. By-product carbon dioxide is removed by MDEA absorption. The finally reformed gas is compressed and fed into deep temperature gas separation. Hydrogen fraction is purified by pressure swing adsorption and fed to customer. Carbon monoxide is purified by rectification and fed to customer. Non reacted methane is used as fuel to heat the steam reforming reactor. Excess of high pressure steam can be provided to customer.

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