



CASE STUDY:

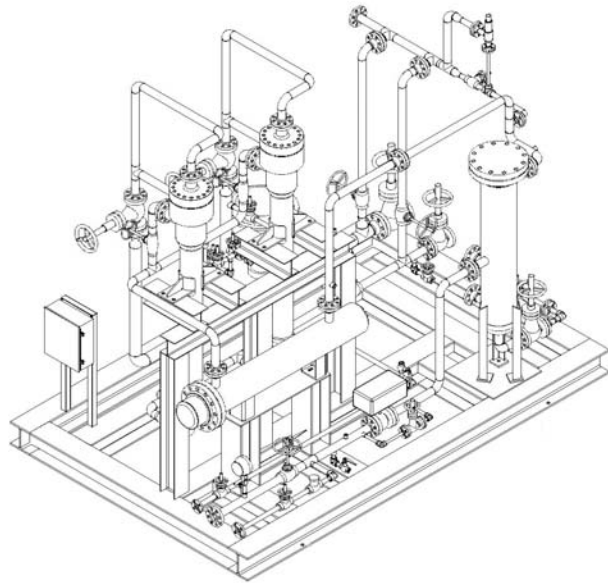
H₂/CO Ratio Adjustment in Syngas Production

Client's Problem

The client, a synthetic fuel company, is developing a process for producing liquid fuels from coal via gasification of coal to syngas, and then conversion of the syngas to liquid hydrocarbons via Fischer-Tropsch synthesis. However, the syngas produced during gasification is not suitable for conversion to liquids without some treatment. Acid gases such as CO₂ and H₂S must be removed, and the ratio of H₂ to CO must be adjusted to the optimal value for Fischer-Tropsch synthesis. To further develop their process, the client was building a large demonstration plant. The syngas produced in this plant contains a high ratio of H₂ to CO that must be reduced. Because this was a demonstration and development plant, the client needed the ability to adjust the H₂/CO ratio to anywhere between 0.7 and 1.5, and to do this over a wide range of feed rates.

MTR's Solution

MTR delivered a membrane unit that automatically adjusts the H₂/CO ratio to as low as 0.5 or as high as 1.5, over a wide range of feed rates. The unit is compact and simple to operate. The unit is scheduled for start-up in mid-2007.



Membrane skid for syngas ratio adjustment installed in a GTL demonstration plant