

GENERON[®] MEMBRANE TECHNOLOGY

Gas Dehydration Systems



At the rig, natural gases are nearly always saturated with water. When water-saturated natural gas flows in a pipeline the following problems can occur:

- **Water can collect in pipelines and increase the pressure drop and/or cause slug flow.**
- **Water can freeze and/or form solid hydrates, consequently reducing the gas flow or plugging the line.**
- **Acid gases (H₂S&CO₂) dissolve in free water and will cause severe corrosion.**

Ideally dehydrating the gas by heating, chemical addition, solid desiccant and membrane dehydration mitigates these problems and improves safety. **GENERON** offers the following

Membrane Dehydration

In **GENERON**[®] membrane gas dehydration systems, the feed gas is filtered to remove any trapped liquids and aerosols. The gas then enters the **GENERON**[®] membrane modules, where the H₂O, CO₂ and H₂S permeate through the membrane. The non-permeated gas, mainly CH₄, remains at process pressure and becomes the product gas.

Hydrate Inhibitor Unit / Low Temperature Separation Unit

In this system, we are cooling natural gas in the presence of inhibitors. The most popular inhibitors are ethylene glycol (EG), diethylene glycol (DEG), and methanol (MeOH). A gas stream leaving a Low Temperature Separator (LTS) should be considered water saturated at the separator temperature and pressure. Conversely, the water dew-point of the gas is reduced to the temperature in the separator.

PSA/TSA Dehydration

There are several solid desiccants that possess the physical characteristics to adsorb water from natural gas. These desiccants generally are used in dehydration systems consisting of two or more towers, and utilize regeneration equipment. One tower is on-stream, adsorbing water from the gas, while other tower is being regenerated and cooled. The towers are switched just before the on-stream tower becomes water saturated.

The GENERON[®] Advantage

- **Extensive Experience** - custom designed skids
- **State-of-the-art Membrane** - high recoveries
- **Simple Solution** - no moving parts, minimal maintenance
- **Engineering support** from concept to completion
- **Remote Operation** - Minimal attention required, fully automated systems
- **Minimal Losses** - low H losses
- **No Chemicals** - environmentally friendly
- **Small Footprint** - easily meet footprint requirements

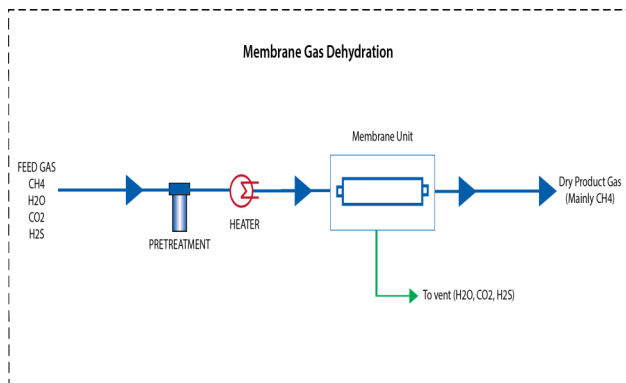


Nitrogen Membrane® Systems

Gas Dehydration

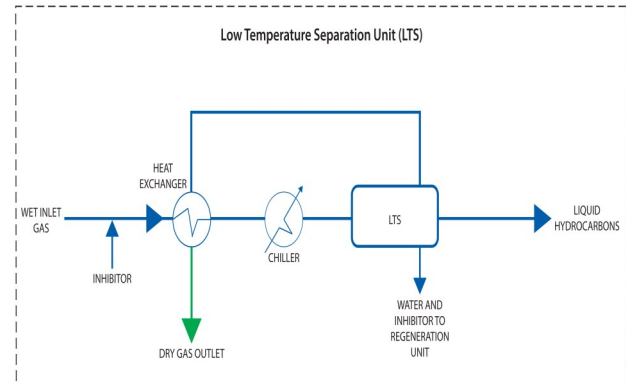
GENERON sales and engineering professionals will help you choose the right system for your specifications and project. Please call one of our engineering professionals at 713.937.5200 or www.generon.com.

GENERON facilities are ISO 9000 Certified and follow NEC/CEC (USA & Canada), ATEX (Europe), AS/NZS (Australia), ICECx (Worldwide) explosion protection requirements. Our ASME vessel shop builds all our columns and separators in-house which allows single source accountability.



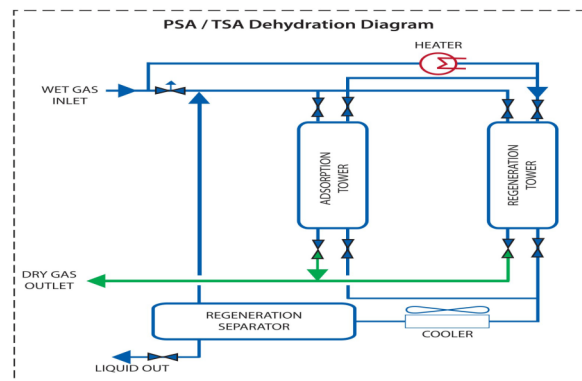
Membrane Dehydration

- Ideal Pressure: Up to 1,000 PSI
- Ideal Temperature: < 160°F / 71°C
- Flow Rate: 0.01 to 500 MMSCFD
- Dew Point: -40°F / -40°C



Low Temperature Separation

- Ideal Pressure: > 75 PSI
- Ideal Temperature: < 120°F
- Flow Rate: Up to 100 MMSCFD
- Dew Point: -50°F / -84°C



PSA/TSA Dehydration

- Ideal Pressure: 100 – 400 PSIA
- Ideal Temperature: < 110°F
- Flow Rate: < 20 MMSCFD

GENERON

16250 Tomball Parkway
Houston, Texas 77086
O - +1 .713. 937.5200
F - +1 .713. 937.5250
www.generon.com

GENERON



C-PS/GC-GDS-0617