CECO Peerless

Gas Processing and Transmission

Fuel Gas Conditioning Skid

Definition

Fuel Gas Conditioning (FGC) system is primarily provided to treat fuel gas by removing any solids and liquid content and set the gas process conditions such as temperature and pressure to meet emission norms and improve the life of downstream equipment.

Product Application:

- Offshore – Process Platforms/Wellheads/ FPSO/ MOPUs/ Drilling rigs
- Onshore – Oil & Gas Processing, Early Production, Well Testing, Refineries, Gas plants, Produced water treatment units

Process Description

If unconditioned process gas is sent directly to the gas engine turbines/generators/burners, it can damage their internal components. Hence, process gas, sourced from a slip-up stream of GDU or sales gas pipelines, requires pre-treatment prior to being used as fuel gas. Presence of even a minute quantity of liquid droplets or solids can severely damage the combustion engine of the turbines, resulting in failure of the equipment and voiding its warranty.

The Fuel Gas Conditioning (FGC) unit typically consists of a pre-heater, pressure reduction manifold, FG Knock out drum (KOD), Gas Scrubber/Filter and Gas Superheater (Electric or Indirect Fired). Depending of the hydrate formation tendency, sometimes a pre-heater may be provided at the FG system inlet.

The pressure of the HC gas entering the FG system is reduced as per the user requirement. Due to this JT effect, the HC condensate and water formed are separated from the gas in the KOD. The gas is then taken to the Coalescers/Fine filter to further reduce the liquid and solid droplet size in the gas to <0.5µm. The gas is then heated, using a Superheater to elevate the its temperature to above the HC dew point (typically 10–20°C) and reduce any possibility of condensate formation in the pipeline leading to the gas turbine.

CECO Peerless Fuel Gas Conditioning package includes the following items:

- FG Pre-Heater
- Pressure Reduction Manifold
- Knock Out Drum
- Gas Scrubber and Fine Filters
- Heater Control Panel (Thyristor Control Panel)
- Piping, E&I and Structural skid

Features:

- Efficiency of 99.99% removal of liquid droplets > 0.3 µm from gas
- Meet Dew Point guarantee using process software
- Modular design to suit Onshore or Offshore applications
- Designed to handle wide range of process conditions
- Meet Stringent Performance Guarantee
- Overall low CAPEX and OPEX for customers

CECO Peerless Process Internals:

- Demister – High performance Vane P8XTM for efficient removal of liquid droplets
- Absolute Separators – Peerless VAS Coalescer to remove 99.999% of all droplets greater than 0.3 micron
- Prefilter – Peerless Gas Filters to remove 100% of solid particles greater than 3 micron and 99% of all solid particle of 0.5 to 3 micron

Capability:

- 20+ years of experience in providing solutions for Oil & Gas treatment systems
- Rich industry expertise for fast track delivery of units
- Custom-made design to meet customer specific requirements

Our Services:

- Design and supply of Process Internals
- Process and Mechanical guarantee for major components
- Optional In-house CFD study to further verify the design and optimise the vessel size
- Complete Engineering, Procurement, Fabrication & Testing of FG skid assembly
- Supply of Spare Parts Interchangeability
- Refurbishment and Retrofit option for existing units to meet the new requirements
- Post Sales Service, Site visit, Troubleshooting & Optimization of Existing units
- Specific case studies/Recommendations
- Commitment to meet the customer requirements