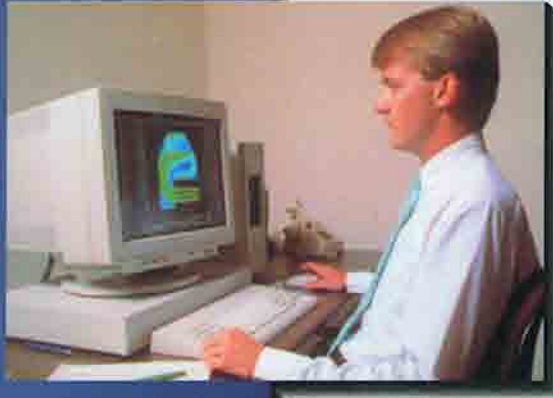


**PEERLESS
LNG**

Peerless Leadership in Liquefied Natural Gas Separation and Filtration



- Efficiently Designed Separation Systems
- Economic Leverage
- Technology Leadership



Reduced LNG Costs with State-of-the-Art Separators for Your Entire Plant

Peerless separation and filtration Proprietary Sizing™ and State-of-the-Art designs provide major economic leverage for owners and constructors of LNG facilities by means of:

- **Vessels several sizes smaller** than conventional “mesh pad” designs, yet efficiently meeting all specified operating parameters.
- **Support structure and space savings** with smaller, lesser weight separator vessels.
- **Lower separator system costs** particularly where low operating temperatures require stainless steel materials.
- **Sole source responsibility** - Peerless provides full mechanical and operating performance guarantees.



The R & D lab is equipped with a computerized Forward Scattering Spectrometer Probe (FSSP). The FSSP uses precision optics and a laser to measure liquid droplets down to submicron diameters. This FSSP is being inspected before being placed into the wind tunnel.

Peerless accomplishes economic leverage through its separation technology leadership:

Research and Development

Well designed separators are the result of engineers who possess the knowledge, experience, and technical support equipment to confirm that their solutions and designs are correct. Peerless' in-house Computational Fluid Dynamics (CFD) expertise and our Research and Development laboratory enables engineers to perform calculations and tests to verify cost effective application solutions. Peerless has more than a decade of CFD experience and has built an impressive record of achievement in separation technology through the combination of field, laboratory and computational analyses. Ask for details.

Computational Fluid Dynamics (CFD)

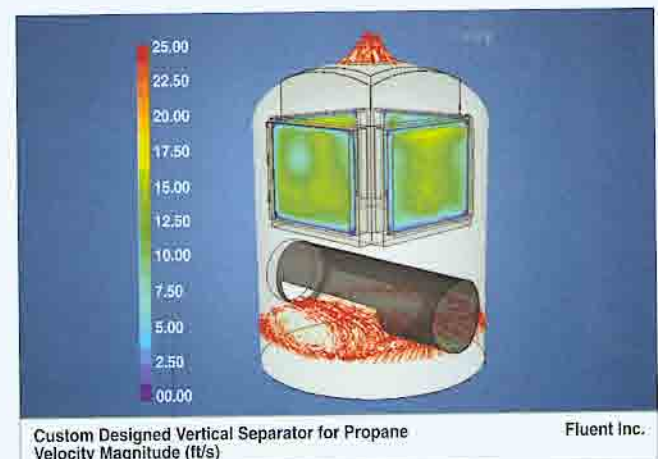
Sophisticated computer models help to reduce the size of separator vessels and ensure that liquid/vapor separation is achieved to specification. The CFD flow model pictured here depicts the final design of a Peerless vertical gas separator for an LNG facility. This graphic provides the engineer with visual confirmation of gas flow paths and that the separator face velocities meet established design criteria.

CFD models use actual vapor properties such as those for propane, ethane, or any of the various mixed refrigerants to determine separation performance and capacity. Ask for Bulletin P93084C4.

In-Line Testing without Plant Shutdown

Peerless Mfg. Co. has developed a new field sampling tool for pressurized gas streams. The Laser Isokinetic Sampling Probe (LISPSM) was developed, custom-designed and built to Peerless' specifications. It collects and weighs entrained liquids and solids both up- and down-stream of separators or filters at very high system operating pressures.

Thus, samples can be taken of liquids and solids *in their pressurized state*. And because of the high degree of sensitivity demanded by Peerless for the LISP, meticulous measurements can be made of particles as small as 0.3 microns in diameter. The result is the most accurate and reliable pressurized, in-line, field sampling of LNG processes without a plant shutdown! Ask for Bulletin LISP.



Peerless' Proprietary Sizing™ reduces the vessel by several sizes. Computational Fluid Dynamics technology contributes to the application solution and ensures all design specifications are met.

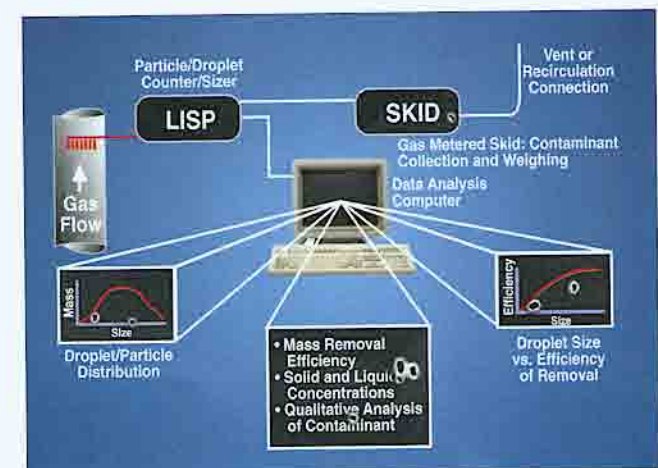
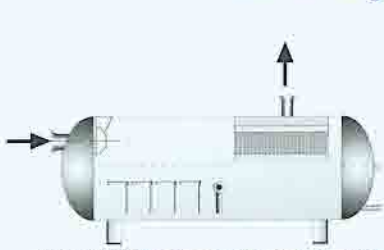
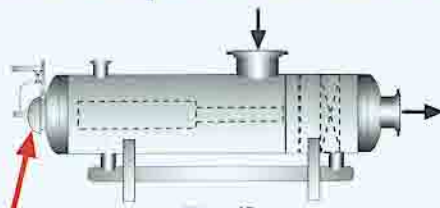


Diagram of the Laser Isokinetic Sampling Probe (LISPSM) field test set-up and field analysis equipment.

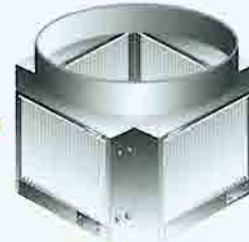
Peerless Designed and Manufactured Products in a Typical Liquefied Natural Gas Process



A Peerless **Horizontal Gas Scrubber** is designed for high efficiency separation of liquids from the gas stream. Ask for Bulletin Series 14000.



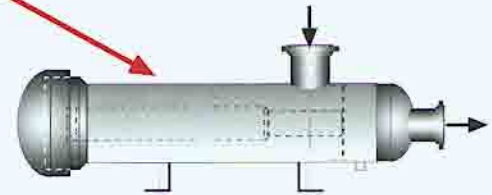
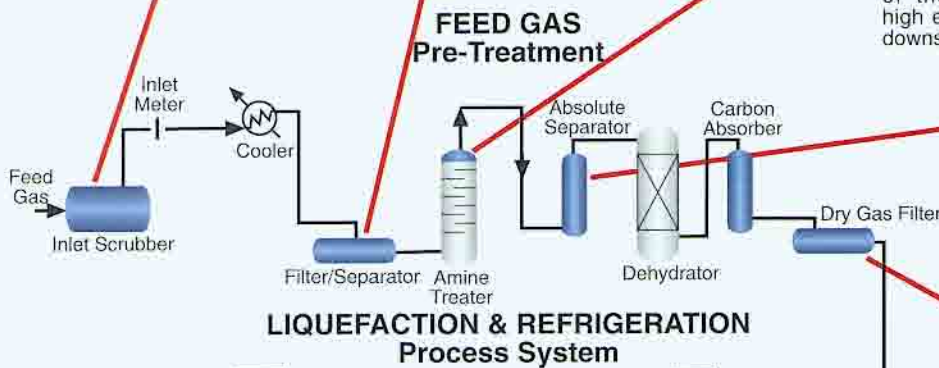
The Peerless **Filter/Separator** saves on first cost, filter cartridge change-out time and space. High capacity inertial vanes remove coalesced liquid droplets from the gas stream. Ask for Bulletin Series 24000.



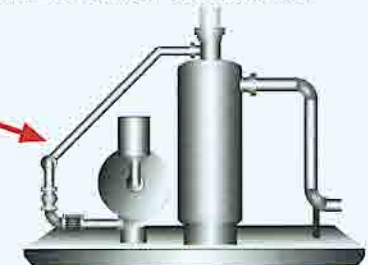
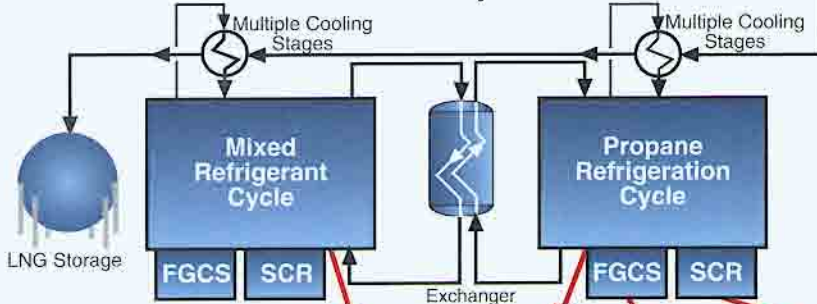
A Peerless **Mist Extractor** at the top of the amine treater will provide high efficiency separation and protect downstream equipment. Ask for details.



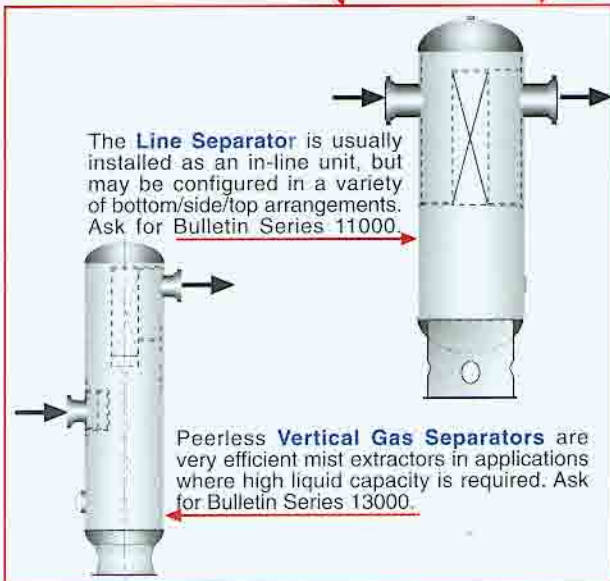
An **Absolute Separator** provides ultra high efficiency for the removal of submicron liquid particles throughout the design flow range. Ask for Bulletin Series 25000.



Peerless **Dry Gas Filters** are designed for maximum operating and change-out efficiency. A quick-release filter cartridge retainer saves on replacement time and costs. Ask for Bulletin Series 31000.



Selective Catalytic Reduction (SCR) Systems reduce NOX emissions from industrial combustion sources. Peerless is an established leader in the research, development and manufacturing of SCR systems. Ask for Bulletin SCR 1995.



The **Line Separator** is usually installed as an in-line unit, but may be configured in a variety of bottom/side/top arrangements. Ask for Bulletin Series 11000.

Peerless **Vertical Gas Separators** are very efficient mist extractors in applications where high liquid capacity is required. Ask for Bulletin Series 13000.



In LNG plants where gas turbines are used, Peerless provides **Fuel Gas Conditioning Systems (FGCS)** with temperature/pressure regulated and contaminant free fuel gas to Dry Low NOX turbines. Ask for FGCS Bulletin.

PEERLESS

Your Gas Separators Directly Affect Your Bottom Line!

- **Efficiently**
 - Remove liquid and solid contaminants simultaneously.
 - Protect expensive downstream equipment.
 - Optimize operations.
- **Your Economic Benefits Are Obvious**
 - Less process contamination equals lower operating costs.
 - Less damage to your processing equipment equals lower maintenance costs.
 - Lower product, solvent and reagent losses equals lower operating costs.
 - Lower installed cost with Peerless separator equals lower capital costs.

Peerless... proprietary designs reduce vessel sizes enhancing LNG facility economics.



...the Global leader in Separation and Filtration.

PEERLESS

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