



GAS SUBCOOLED PROCESS

Ortloff invented the Gas Subcooled Process (GSP) in the late 1970's. Since then, Ortloff's GSP technology has become a workhorse in the gas process industry, providing significantly higher ethane or propane recovery from natural gas streams than the industry standard single stage (ISS) expander design.

The GSP design incorporates the addition of a reflux stream generated from a portion of the inlet gas which is fed as reflux to the top of the Demethanizer.

APPLICATIONS

The GSP technology is flexible, and can operate as either an ethane recovery or a propane recovery process. The GSP technology overcomes two key limitations of the ISS design. With GSP, the expander feed separator operates at a warmer temperature, which eliminates instabilities when operating too close to the phase envelope, commonly referred to as the "snow-ball effect". GSP also incorporates an additional reflux stream feeding the Demethanizer column above the expander feed. This enables GSP to achieve significantly higher recoveries than the conventional ISS design.

Another key feature of the GSP technology is the ability to retrofit existing ISS plants thereby increasing ethane or propane recovery and improving over-all plant economics. Ortloff has provided retrofit designs for numerous plants, both in the U.S. and abroad.



Typical applications for the GSP process include:

- High ethane recovery from natural gas streams with almost no loss of propane and heavier components.
- High propane recovery from natural gas streams while rejecting lighter components to meet liquid product specifications.
- Gas processing plants where varying economic conditions may favor operating in either ethane recovery or ethane rejection mode.

GSP technology can be installed in a new facility or retrofit into an existing facility where high recoveries, increased throughput, and/or plant operational flexibility are desired.

FEEDSTOCK AND PRODUCTS

The GSP process can accommodate most natural gas compositions. Richer gas compositions may require the addition of a refrigeration system. Inlet pressures above 600 PSI are generally preferred.

