



SINGLE COLUMN OVERHEAD RECYCLE PROCESS (SCORE)

Ortloff's Single Column Overhead REcycle (SCORE) process is a cryogenic gas processing technology suited to the recovery of propane and heavier hydrocarbons from a natural gas stream. The SCORE design is an enhancement of Ortloff's popular Overhead Recycle Process, combining extremely high propane recovery with high efficiency.

Reflux for the column is generated by condensing a vapor side draw stream. A liquid side draw is utilized for process cooling to optimize heat integration. With appropriate design features, a plant using the SCORE process can also be switched to operate in an ethane recovery mode utilizing Ortloff's Gas Subcooled Process (GSP).

APPLICATIONS

Ortloff's SCORE process is primarily utilized as an efficient propane recovery technology. Propane recovery typically exceeds 97%, with 99% or higher easily achievable, while rejecting all the ethane. If ethane recovery is desired in addition to high propane recovery, SCORE can be operated in a partial ethane recovery mode by adjusting the amount of heat input to the column. This 'incidental' ethane recovery mode is usually limited to about 40% ethane recovery.

In cases where economics favor even higher ethane recovery, the plant can be designed to switch to operation in a GSP mode. Typical ethane recovery is greater than 85%, with propane recovery greater than 98%. Although switching the SCORE plant to GSP requires additional piping and several valves, additional equipment is not required in most cases.

Typical applications for the SCORE process include:

- High propane recovery from natural gas or refinery off-gas streams with minimum compression requirements, while rejecting lighter components to meet liquid product specifications.
- Gas processing plants where moderate ethane recovery may be desirable without the need for additional equipment.



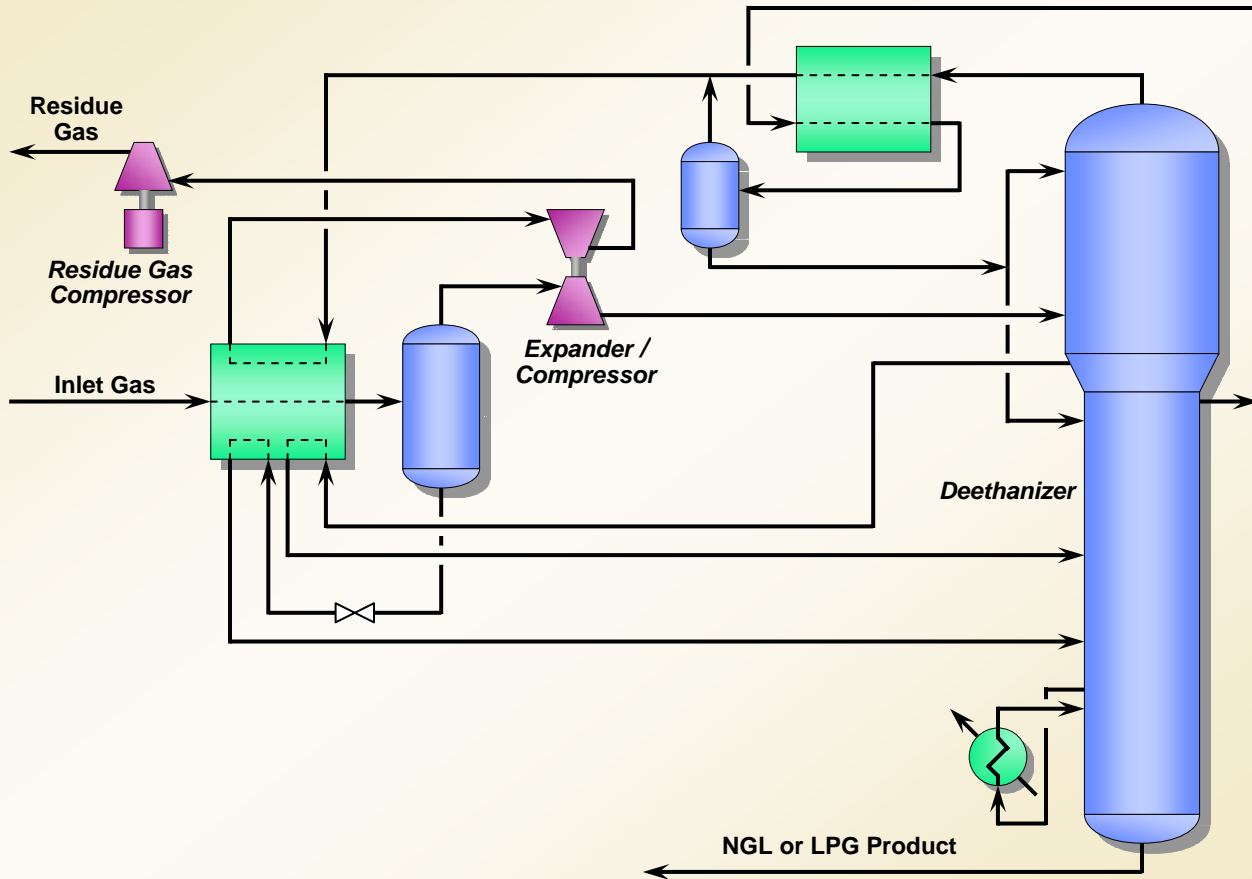
- Gas processing plants where varying economic conditions may favor operating in either ethane recovery or ethane rejection modes for extended periods.

FEEDSTOCK AND PRODUCTS

The SCORE process can accommodate a wide range of natural gas compositions and inlet conditions. Inlet pressures above 600 PSI are generally preferred for natural gas streams, but lower pressures can be accommodated. Richer gas compositions may require the addition of a refrigeration system.

In normal operation, the SCORE process produces a mixed LPG product stream, typically meeting a maximum ethane in propane liquid product specification. When converted to GSP mode, a mixed NGL product stream is produced, typically meeting a maximum methane in ethane liquid product specification.

Ortloff's SCORE Process



EXPERIENCE

Ortloff's SCORE technology was developed in the late 1990's and first utilized in 2000. A number of plants are now in operation, with others being designed and constructed around the world. SCORE is the technology of choice for plants where high propane recovery and maximum efficiency are of great importance.

FOR MORE INFORMATION

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