



Ortloff's Recycle Split Vapor (RSV) process is an enhancement of Ortloff's original Gas Subcooled Process (GSP) technology. The RSV process can provide ultra-high ethane or propane recovery from natural gas streams. It can also be operated to recover only a portion of the ethane.

The RSV design incorporates the addition of a small reflux stream generated from residue gas which is used to supplement the usual reflux stream. An additional rectification section is installed above the typical top feed point of the GSP process. The liquefied residue gas stream is then fed as reflux to the top of this new section. The lower section of the tower provides bulk recovery of the desired liquid product while the top section provides the 'polishing' step.

APPLICATIONS

The RSV technology is extremely flexible, and can operate as either an ethane recovery or a propane recovery process. This flexibility allows an operator to maximize plant profits based on ethane economics. In addition, an RSV plant can operate at flow rates significantly different than design. In the case of lower flow, higher recoveries can be achieved; for flow rates higher than design, high product recoveries can be maintained.

Another important feature of the RSV technology is the ability to tolerate increased CO₂ inlet gas concentrations. Because it employs a leaner top reflux feed, the tower pressure can be increased while still providing high recovery. This provides a greater margin of safety from CO₂ freezing.



NGL / LPG RECOVERY

RECYCLE SPLIT VAPOR PROCESS



Typical applications for the RSV process include:

- High to ultra-high ethane recovery from natural gas streams with essentially 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.

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

FEEDSTOCK AND PRODUCTS

The RSV 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.

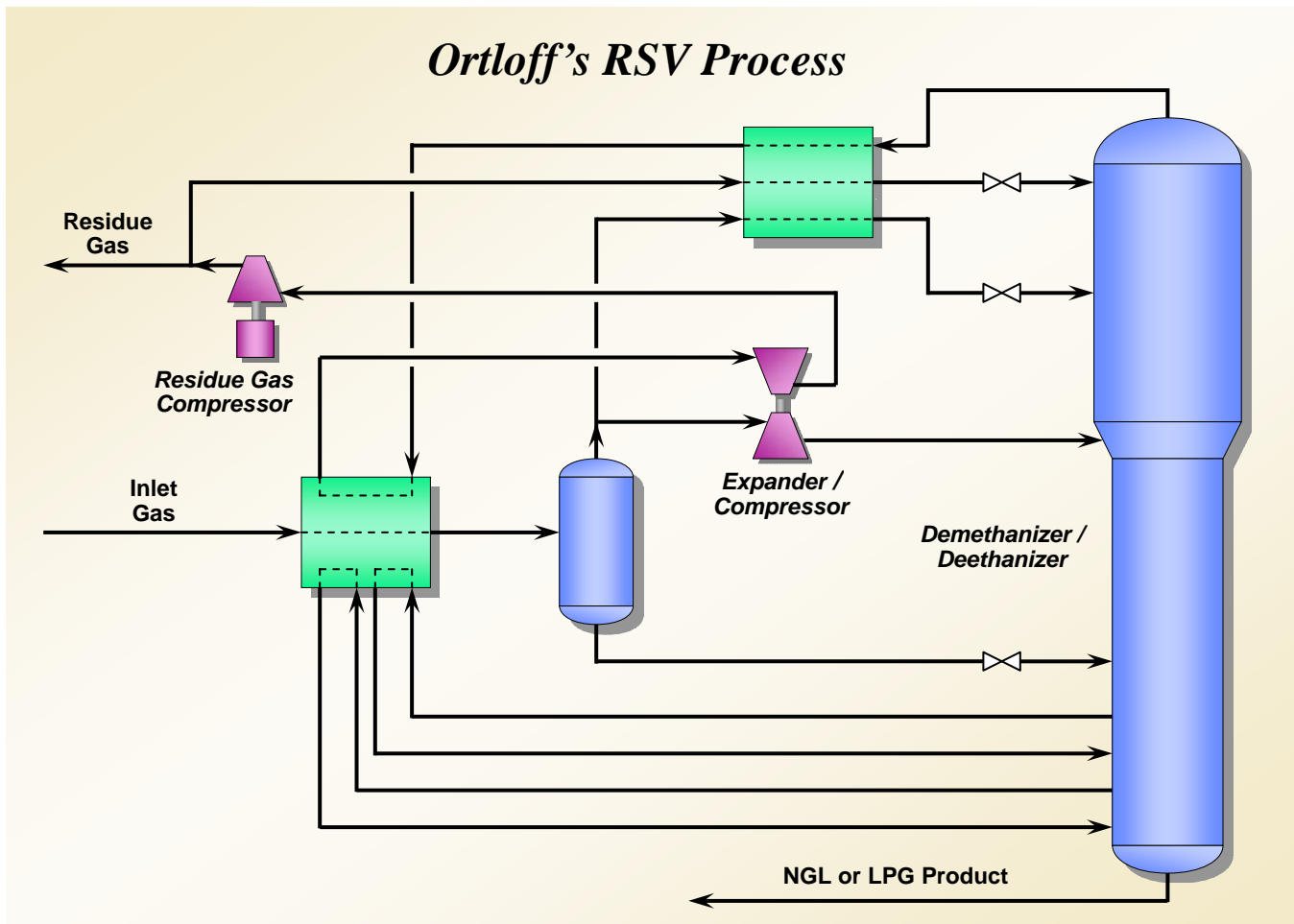
FEEDSTOCK AND PRODUCTS (CONT.)

In ethane recovery mode the RSV process produces a mixed NGL product stream, typically meeting a maximum methane in ethane liquid product specification. In propane recovery mode a mixed LPG product stream is produced, typically meeting a maximum ethane in propane liquid product specification.

The residue gas product stream will contain methane or methane and ethane, depending on the mode of operation.

EXPERIENCE

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



FOR MORE INFORMATION

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