

VI. APPENDIX I

GLOSSARY OF TERMS

GLOSSARY OF TERMS USED WITH STRATCO REACTOR SYSTEM

FRESH FEED - Fresh synthesis gas direct from the generator.

Consists of approximately 33 per cent carbon monoxide, 60 per cent hydrogen, some carbon dioxide, some methane, and a little nitrogen.

FEED NO. 1 - Consists of all of the fresh feed fed to the reactor plus part of the recycle gas.

FEED NO. 2 - Consists of 100 per cent recycle gas.

RECYCLE GAS - This is approximately the same composition as wet gas. It is gas containing some unreacted synthesis gas and is fed back to the reactor to obtain more complete reaction.

WET GAS - Effluent gas from the reactor after all of the product oil and water have been removed by condensation. Consists of 10-25 per cent carbon dioxide, 2-15 per cent carbon monoxide, 40-55 per cent hydrogen, 8-15 per cent methane, small amounts of heavier hydrocarbons, and some nitrogen.

d-P BLEED GAS - Small flow of recycle gas used to purge the d-P meter taps.

TOP AND BOTTOM SEAL GASES - Small flow of recycle gas used to purge the seals to keep them free of catalyst.

SEALS - Mechanical means of sealing the reactor where the center shaft extends out of the top and bottom.

ANNULUS OR ANNULAR SPACE - The chamber surrounding the center impeller chamber. The catalyst drops down into this chamber and feeds into the bottom of the impeller space where it is circulated again.

ANNULUS GAS - Recycle gas used to fluidize the catalyst in the bottom of the annulus to prevent it from packing.

CENTER BEARING BLEED - Recycle gas fed to the guide bearing around the center of the shaft. Its use is to prevent catalyst from getting on the bearing surfaces, and it is also used as a carrier for the bearing lubricant.

TURBINE - Steam turbine on top of reactor structure used to turn the main shaft of the reactor. On this shaft are the multi-vaned spinner for catalyst separation, and the impellers for catalyst circulation.

COOLING OIL JACKETS - In the reactor there are two jackets through which oil is circulated to remove the heat of reaction. Jacket No. 1 is around the impeller chamber and is surrounded by the annulus. The oil enters the top of this jacket, circulates vertically, and comes out at the top opposite where it enters. Jacket No. 2 is around the annulus and forms the outside of the reactor vessel. The oil enters this jacket at the bottom and circulates upward in a spiral until it leaves at the top, directly above where it enters at the bottom.