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(54) Title: HYDROCARBON GAS PROCESSING

(57) Abstract: A process and apparatus for the recovery of ethane, ethylene, propane, propylene, and heavier hydrocarbon components from a hydrocarbon gas stream is disclosed. The stream is cooled and divided into first and second streams. The first stream is further cooled to condense substantially all of it and is thereafter expanded to the pressure of a fractionation tower and supplied to the fractionation tower at a first mid-column feed position. The second stream is expanded to the tower pressure and is then supplied to the column at a second mid-column feed position. A distillation vapor stream is withdrawn from the column below the feed point of the first stream and compressed to an intermediate pressure, and is then directed into heat exchange relation with the tower overhead vapor stream to cool the distillation stream and condense substantially all of it, forming a condensed stream. At least a portion of the condensed stream is directed to the fractionation tower at a third mid-column feed position located above the feed point of the first stream. A recycle stream is withdrawn from the tower overhead after it has been warmed and compressed. The compressed recycle stream is cooled sufficiently to substantially condense it, and is then expanded to the pressure of the fractionation tower and supplied to the tower at a top column feed position. The quantities and temperatures of the feeds to the fractionation tower are effective to maintain the overhead temperature of the fractionation tower at a temperature whereby the major portion of the desired components is recovered.