

Abstract

LIQUEFACTION METHOD AND SYSTEM

A feed gas is liquefied using a closed loop refrigeration system in which a cooled compressed gaseous refrigerant stream (150) is expanded (136) to provide a first expanded gaseous refrigerant stream (154) that is substantially vapor and is used to cool and substantially liquefy a feed gas stream (100) through indirect heat exchange (110). The substantially liquefied feed gas stream (102) preferably is subcooled through indirect heat exchange (112) against a second expanded gaseous refrigerant stream (172) that preferably also is substantially vapor and can be provided by a cooled compressed gaseous refrigerant stream (170) or by a portion of the first expanded gaseous refrigerant stream (152). Cooling duty for the compressed gaseous refrigerant stream (146) is provided by a portion (160) of the first expanded gaseous refrigerant stream (152), gaseous refrigerant (156) partially warmed by said heat exchange (110) against feed gas, and/or second expanded gaseous refrigerant stream (174) warmed by said subcooling (112).

Fig. 1