

عنوان مقاله:

Configuration and Method of Integrated NGL Recovery with Minimum Energy Requirement and Exergy Analysis

محل انتشار:

سومین همایش ملی سوخت، انرژی و محیط زیست (سال: 1392)

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نویسندگان:

Mehdi Mehrpooya - Renewable Energies and Environmental Department, Faculty of New Science and Technologies, University of Tehran, Tehran, Iran

Ali Vatani - School of Chemical Engineering, University College of Engineering, University of Tehran, P.O. Box: 11365-4563, Tehran, Iran

Farid Sadeghian Jahrtomi - School Of Chemical Engineering, College Of Engineering, University Of Isfahan

خلاصه مقاله:

In this study a novel process configuration for recovery of hydrocarbon liquids from natural gas is proposed by applying demethanizer and deethanizer column. The required refrigeration in this configuration is obtained by a self-refrigeration system. High performance of the multi-stream heat exchangers, high recovery levels of the hydrocarbon liquids and low required compression power (in the internal refrigeration section) and reduce the number of compressors are the most important characteristic of the proposed configuration. Elimination of propane which serves as refrigerant for industrial application such as cooling feed gas and refrigerant of deethanizer condenser is one of the most important features of this new configuration. Effect of the mixed self-refrigerant flow rate and pressure on the performance of the process is discussed. For such processes the optimum number of multi-stream heat exchangers is three. One of the main goals of the present study is to achieve integrated process which energy lost is minimized and reducing number of instruments is obtained. By using the method of this process configuration, recoveries of propane and heavier components in excess of 98% are readily achievable.

کلمات کلیدی:

Natural gas Liquid recovery Self-refrigeration

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