PERFORMANCE EVALUATION OF SINGLE COLUMN OVERHEAD RECYCLE (SCORE) PROCESS LICENSED BY ORTLOFF ENGINEERS LTD IN NATURAL GAS FRACTINATION

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ABSTRACT

The objective of the research was to evaluate the performance of Single Column Overhead Recycle (SCORE) Process in Cryogenic Gas Processing Plant based on practical data and simulation using HYSYS program. Evaluation of this process was started by collecting practical data as control system (DCS) logsheets in control room for two months operation in period August 2012 & Januari 2013 when the process was running in steady and unsteady state condition. The collected data were analyzed to identify and evaluate the main problem of this Cryogenic Gas Processing Plant. The simulation of program HYSYS and study literatures were conducted to solve the problems appeared in this evaluation process. Based on the data evaluation, the performance of SCORE cryogenic process in achieving C3+ recovery were affected by inlet pressure of feed gas compressor, profile pressure drop across upstream feed gas compressor unit - dehydration unit, SCORE process operation, and pressure of downstream plant that flowed lean gas to power plant. HYSYS simulation results showed that C3+ recovery might be increased by controlling top bed reflux in deethanizer column should be greater than middle bed reflux. From the evaluation results, recommendation and shortcut has been proposed to be used by operators as a reference to achieve plant performance.

Key Words : SCORE, Recovery, HYSYS, Cryogenic, Reflux, Ratio
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