

Reduce Costs and Energy Consumption of Deethanizing and Depropanizing Fractionation Steps in NGL Recovery Process

권용수, Nguyen Van Duc Long, 이문용*
영남대학교
(mynlee@yu.ac.kr*)

In this work, our aim is how to utilize the dividing wall column (DWC) to improve the performance in deethanizing and depropanizing fractionation steps in natural gas processing (NGL). Starting from an initial conventional column sequence, the initial designs for the conventional DWC and top dividing wall column (TDWC) were obtained by maintaining the number of trays. In succession, they were optimized to reduce the energy consumption. The results show that the DWC and TDWC offer many benefits by decreasing the operating cost including refrigeration cost, as well as reboiler and condenser duty. Furthermore, by using DWC and TDWC, the purity and recovery of ethane also increases, particularly, from 95 to around 97% and 95 to more or less 98%, respectively. Based on these results, the comparison of performance between conventional DWC and TDWC was analyzed.