

Feasibility Study of a Novel NGL Recovery Process

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The depletion of oil makes natural gas become a major alternative fossil fuel. The natural gas processing technology is growing rapidly especially the major processes such as treatment process, liquefaction process, and recovery process. This work presents a novel process for NGL recovery for FLNG applications and its comparison with another eight processes; i.e. gas sub-cooled (GSP), cold residue gas-recycle (CRR), recycle split-vapor (RSV), IPSI-1, flashed vapor reflux (FVR), liquid subcooling process (LSP), split flow reflux (SFR), and vapor enrichment process (VEP). To make a fair comparison, all process was optimized with the product specification as the constraint. The result show that the CRR process gives the highest capital cost and the FVR process gives the lowest capital cost. Meanwhile for the operating cost, the highest is CRR and the lowest is the proposed process. The whole simulation of each process was developed using Aspen HYSYS®. This study was supported by a grant from the Gas Plant R & D center funded by the Ministry of Land, Transportation and Maritime Affairs (MLTM) of the Korean government. This work was also supported by Priority Research Centers Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (2014R1A6A1031189).