

Improved NGL Production Based on Thermally Coupled Distillation Column on Optimal
Integration Single Mixed Refrigeration Plant

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Natural Gas Liquid (NG Liquid) as a product of natural gas is one of important product that is produced from non-renewable sources, therefore, effective design of process becomes more important in order to make more efficient energy use. This study is focused on advanced scheme of NG Liquid distillation process from one of SMR Process, Korea SMR (KSMR) Plant. NG Liquid is recovered by utilizing direct sequence distillation. However, conventional distillation sequences have low thermodynamic efficiency. NG Liquid is performed in energy efficiency thermally coupled distillation scheme. Proposed thermally coupled distillation scheme decrease energy consumption in reboiler duty. Thermally coupled distillation sequences are applied in optimal integrated process and compared among them with recovery and purity constrains. This work was also supported by Basic Science Research Program through the NRF funded by the Ministry of Education, Science and Technology (2012012532). This study was also 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.