

Comparative study of Dual Mixed Refrigerant Process with Cascade cycle integration

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In the LNG industry numerous methods are available for NG liquefaction, ranging from production capacity to complexity and are operating independently in both onshore and offshore platform successfully. In this paper simulation of several Dual Mixed Refrigerant (DMR) processes is operated as a basic study. From this cases with same effective conditions, calculation of the heat and compression duty requirement is performed after optimization. After all, the specific power consumption calculated based on heat and compression duty show the reductions with the complexity of liquefaction cycle at the expense of capital cost. The optimized integrated plant saves manifold of energy than the independent optimized plant, because of the synergy effect and thus helps in reduction of plant specific power at the same time having less impact on environment. As a result, this paper introduce an efficient and energy-saving DMR process. This research 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).