

Optimization of Korea Single Mixed Refrigerant Natural Gas Liquefaction Process Applying Univariate Methodology

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The multivariable constrained optimization methodology is a kind of search methods. In complex processes, many elaborate search procedures can break down due to the large number of variables and strict constraints. Effective solving process optimization problems lead to the univariate methods in conjunction with checking feasibility. They can be successful only if the starting point and search sequence of variables are suitable. Therefore, this research proposed an effective method to enhance the base case and to choose the better sequence for searching. A case study, Korea Single Mixed Refrigerant liquefaction cycle, was applied to demonstrate the proposed methodology. Compared to the base case, the improvement in total consumed energy is above 15%. 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)