

### 열복합 증류탑의 액화 천연가스 공정에서의 응용

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Liquefied natural gas plant requires small number of distillation columns with limited height for its gas separation due to its harsh condition of process operation. The fully thermally coupled distillation column (FTCDC) provides the reduction of required column number and investment and utility costs. When the FTCDC was utilized in the LNG plant, its design and column efficiency were examined with the simulation results using the HYSYS. In addition the cost evaluation and column operation were also discussed. When the same number of trays in the depropanizer and debutanizer of the conventional distillation system was implemented to the the FTCDC, less investment cost was required. While the saving in steam cost was expected, the total reduction of utility cost was smaller due to the increased consumption of refrigerant in the FTCDC. The operation difficulty associated with the FTCDC implementation can be solved with wide design margin of product specification.