

Energy Optimization for Maximum Energy Saving with Optimal Modification in Continuous Catalytic Regeneration Reformer Process

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Abstract: The heat integration retrofit analysis of the Continuous Catalytic Regeneration Reformer Process (CCRRP) was conducted to determine the major opportunities for maximum energy saving via optimal modifications of the process design. Process data used from a real existing CCRRP were extracted, which are applicable in the pinch analysis technique (PAT). The present investigations of analysis showed a great opportunity for reducing energy consumption and costs at an optimum minimum approach temperature of 40°F. Retrofit analysis of current process to achieve the optimal modifications of process included three additional heat exchangers with shells tube of two heat exchangers according to reduction in DT min from 87°F to 40°F. The evaluation of maximum energy savings as new design indicated the reduction of utilities by about 32%, which led to reduce of the total cost index (Cost/s) in the process of approximately 4.5%.

Keywords:

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