Simulation of CO_2 absorption plant for recovery of CO_2 from flue gases

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The CO_2 separation methods are now being developed to recover and concentrate CO_2 in flue gases to prevent global warming. Among the processes for CO_2 recovery, chemical absorption with amine aqueous solutions has been applied to power plant. This study is focused on recovery of CO_2 from gas turbine exhaust of Sarkhun gas refinery power station which is located in Bandar Abbas, Iran. The design parameters are solvent concentration, solvent circulation rate, heat duty(reboiler and condenser duty), number of stages in absorber and stripper columns.

The solvents used in this process is monoethanolamine(MEA), diethanolamine(DEA), Methyldiethanolamine(MDEA) and diglycolamine(DGA). The simulation results of heat duty of the CO_2 recovery process using these solvents are compared.