DESIGN OF ECONOMIZER INCREASING BOILER 52 B 1/2/3 EFFICIENCY IN UNIT UTILITIES COMPLEX PT. PERTAMINA RU IV CILACAP

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Abstract

Design of economizer boiler 52 B 1/2/3 at PT. Pertamina RU IV Cilacap use Log Mean Temperature Difference (LMTD) method. Method is used to calculate heat transfer to determine the best design of economizer. Numeric calculation is calculated by tools with variation such as outside diameter of tube, transversal pitch, and longitudinal pitch. From calculation is obtained the best value of heat transfer that obtain from variation outside diameter tube is 50 mm, transversal pitch is 60 mm, and longitudinal pitch is 30 mm with value of heat transfer is 2,4.10^6 W. This calculation is the best design of economizer with error value is 0,02%. If economizer of boiler 52 B 1/2/3 is installed in boiler 52 B 1/2/3, The fuel saving is 7,8.10^10 kkal/year. Money saving for fuel is 4.749.782 USD/year.

Keywords : boiler, economizer, LMTD