

Water Tube Boiler Efficiency Analysis Using Direct Method and Indirect Method in Steam Power Plant at Unit 7 PT POMI PAITON

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ABSTRACT

Boilers are the main equipment in steam power plants. Its main function is to change water from the liquid phase to the vapor phase. The aim of this research is to analyze the efficiency of water tube boilers using direct or indirect methods at PLTU PT POMI Paiton, which was carried out in January 2024. The methods used are descriptive research and quantitative research. The results of this research show that the boiler efficiency using the direct method is 84.11% while the indirect method is 83.61%. This value has decreased, which is caused by more energy used to produce steam and less energy lost. Several causes of a decrease in boiler efficiency include fuel quality, number of fuel calories, incomplete combustion, scale formation in the boiler area, feed water quality, etc. which can cause a decrease in boiler efficiency.

Keywords: *Direct Method, Efficiency, Indirect Method, Water Tube Boiler*