ANALYSIS THE EFFECT OF LOAD CAPACITY IN PAITON VAPOUR POWER PLANT ON THE PERFORMANCE EFFICINCY OF TURBINE HMN SERIES 4 AT PT. YTL EAST JAVA

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ABSTRACT

Turbine efficiency analysis in the staem power plant system in PT. East Java YTL has been carried out based on the law of thermodynamics. This research focuses on the efficiency of the turbine wich is one of the important components in the PLTU system. The purpose of this research is to determin the effect of load capacity on a 610 MW steam power plant on turbine efficiency. This study uses 3 comparisons of load capacity percentages, there are 75%, 85%, 100%. The result of the operating data obtained methods, especially the analysis of turbine efficiency, which provides guidance regarding energy conversion or energy transfer processes that occur. Based on data processing, the highest value of Qo_{ut} *in the steam turbine wa 356,153 kj/kg and the lowest was 462,125 kj/kg. the highest* Q_{in} *value in the steam turbine is a minimum of 179,756 kj/kg kg and the lowest is in the steam turbine of 179,756 kj/kg. the maximum turbine efficiency is 92%, while the minimum turbine efficiency is 88%. There is an increase in the value of load capacity on the efficiency of the turbine, respectively, from the load of 75%, 85%, 100%, namely 89.44%, 88.62%, 88.78%*

Key Words *: Efficiency, Law of Thermodynamics, Load Capacity and Turbines.*