ABSTRAK

Pada siklus PLTU secara garis besar terdiri dari Boiler,Turbin Uap,Generator,Kondensor dan pompa pompa.Kondensor adalah komponen Utama dalam siklus PLTU dimana kondensor berfungsi sebagai media kondensasi uap ekspansi yang keluar dari Turbin tekanan rendah atau sudu turbin terakhir.Analisis Pengaruh Kebuntuan *Tube* Terhadap Kinerja Kondensor Pada Instalasi PLTU unit 5 Muarakarang,Pada tahap awal dilakukan pengukuran terhadap parameter-parameter operasi kinerja kondensor meliputi temperatur fluida pendingin masuk dan keluar kondensor, laju aliran massa uap, temperatur fluida panas uap di kondensor dengan batasan beban 135 MW.Hasil-hasil pengukuran dipergunakan untuk mengevaluasi kinerja kondensor tersebut dimana parameter-parameter kinerjanya adalah Luas permukaan transfer panas,*Heat transfer Coefficient* (perhitungan aktual dan perhitungan standar HEI), *Tube Velocity* dan *Condenser Cleanliness*. Hasil perhitungan pokok dibandingan dengan perhitungan dengan data data *komisioning* kondensor menunjukkan nilai luas permukaan transfer panas *tube* mengalami penurunan sebesar 580,704 m^2 atau 6,1% ,*Tube velocity* mengalami kenaikan sebesar 0,43 ft/s,hal ini berakibat kinerja kondensor aktual mengalami penurunan sebesar 2510,842 kJ/m^2h^0C,dan *Condenser Cleanliness Factor* mengalami penurunan sebesar 20%. Solusi yang dapat dilakukan agar kebuntuan *tube* tidak terjadi adalah Melakukan *Flushing debris filter*,Mengoperasikan *Tube Condenser Ball Cleaning System* secara rutin dan terjadwal, serta bila parameter *Cleanliness Factor* rendah dan nilai vacuum turun lakukan pembersihan *tube* kondensor dengan *Water Jet Tube Cleaning System* untuk mengkondisikan *tube* kondensor kembali bersih dan mencegah terjadinya penyumbatan tube.

Kata kunci: Kondensor, PLTU, Kebuntuan pipa, *Condenser Cleanliness factor*

ANALYSIS OF THE EFFECT OF TUBE IMPASSE ON CONDENSER PERFORMANCE IN UNIT 5 MUARAKARANG STEAM POWER PLANT INSTALLATION

ABSTRACT

In the Thermal Power Plant cycle the outline consists of Boilers, Steam Turbine, Generators, Condensers and pumps.The condenser is the main component in the Thermal Power Plant cycle where the condenser functions as a condensation medium for expansion steam coming out of the low pressure turbine or last turbine blade. Analysis of the Effect of Tube Impasse on Condenser Performance in Unit 5 Muarakarang Steam Power Plant Installation. At the initial stage measurements of condenser performance parameters include cooling temperature in and out of the condenser, steam mass flow rate, steam heat fluid temperature in the condenser with a 135 MW load limit. Measurement results are used to evaluate the performance of the condenser where the performance parameters are tube heat transfer surface area, Heat transfer Coefficient (actual calculation and HEI Standard calculation), Tube Velocity and Condenser Cleanliness. The main calculation results are compared with calculations with commissioning data condenser data showing the value of the heat transfer surface area of the tube decreases 580,704 m^2 or 6,1%, Tube velocity has increased by 0,43 ft/s, this results in the actual condenser performance decreasing by 2510,842 kJ/m^2h^0C and the Condenser Cleanliness Factor decreased by 20%. The solution that can be done so that the tube deadlock does not occur is Conducting Flushing debris filter, Conducting Tube Condenser Ball Cleaning System regularly and scheduled, and if the Cleanliness Factor parameter is low and the vacuum value is down, do the condenser tube cleaning with Water Jet Tube Cleaning System to condition the condenser tube clean again and prevent tube clogging.

***Keywords**: Condenser, Thermal Power Plant, Tube Impasse, Condenser Cleanliness factor.*