



INTISARI

Proses Produksi PLTU tidak lepas dari suplai sistem air pengumpan oleh *boiler feed pump*. Sebelum air diubah menjadi uap, air akan dialirkan terlebih dahulu ke unit *heater*. Dengan adanya unit *heater* efisiensi dari sebuah PLTU dapat ditingkatkan karena setelah mendapatkan panas dari unit *heater*, air umpan akan membutuhkan pemanasan yang lebih sedikit didalam boiler. Salah satu alat di unit *heater* untuk air umpan sebelum masuk kedalam boiler adalah *high pressure heater*. Secara umum alat ini melakukan pemanasan menggunakan uap ekstraksi yang diambil dari *high pressure steam turbine*. Proses pemanasan air umpan memiliki dua indicator yaitu suhu dan tekanan, sehingga kedua indicator tersebut harus tetap dijaga pada nilai yang sesuai. Performa dari *high pressure heater* bisa saja turun jika terdapat masalah seperti *water chamber*, *impurities* didalam *tube* dan *shell*. Karena fungsi yang vital dari *high pressure heater* maka perlu diketahui performa dari *high pressure heater* apakah masih memiliki performa yang baik untuk beroperasi.

Proses analisis dilakukan dengan menentukan *Logaritmic Mean Temperature Difference (LMTD)*, *dirt factor* dan *effectiveness* dengan menggunakan metode *NTU (Number Transfer of Unit) – Effectiveness*. Penelitian ini akan menganalisis *high pressure#1* di unit 20 yang berlokasi di PLTU Rembang dengan membandingkan performa pada saat *commissioning* dan setelah *commissioning*.

Hasil dari performa dari *high pressure heater* setelah *commissioning* menunjukkan nilai yang fluktuatif pada setiap indicator performa seperti *LMTD*, *dirt factor* dan *effectiveness*. Setelah membandingkan hasil pada saat *commissioning* dan setelah *commissioning*, *effectiveness* dari *high pressure heater* menunjukkan nilai yang tinggi. Pada saat *commissioning* rata-rata *effectiveness* dari *high pressure heater* 0,887 dan setelah *commissioning* 0,886.



ABSTRACT

Production process of Electricity Steam Power Plant used feed water supply by boiler feed pump. Before the feed water change become steam, it will be flowed to the heater unit. By this heater unit the efficiency of Electricity Power Plant can be increased because after get heating from heater unit feed water only need a little heating at boiler. One of the equipment of the heater unit for feed water before come into boiler is high pressure heater. Generally this equipment do the heating process used the steam which is taken from high steam turbine extraction. The Process of feed water heating has two indicators, the temperature and the pressure, so that indicators must be kept at the appropriate value. Performance of high pressure heater can be decreased if there is a problem with this heater equipment like water chamber or the impurities of the tube and shell. Because the vital function of high pressure heater so it's needed to know the performance of high pressure, is it still have a good performance to be operated.

The Process of analysis is done by determine LMTD (Log Mean Temperature Difference), dirt factor and effectiveness by using NTU (Number Transfer of Unit) – Effectiveness method. This essay research will analyze high pressure heater#1 in unit 20 that located in Rembang Electricity Steam Power Plant by comparing the performance while commissioning and after commissioning.

The result of the performance of the high pressure heater after commissioning showed fluctuating result on every performance indicator as LMTD, dirt factor and effectiveness. After comparing the result while commissioning and after commissioning the effectiveness of high pressure heater showed a high effectiveness with the mean of the result is 0,887 while commissioning and 0,886 after commissioning.