

## ABSTRAK

Penulisan ini tentang Pengaruh *Preventive Maintenance* terhadap performa *Air Cooled Chiller* yang dilakukan di Instalasi Teknologi Radioisotop dan Radiofarmaka Badan Riset dan Inovasi Nasional, performa unit *chiller* menjadi kurang baik dikarenakan kurangnya perawatan yang dilakukan. Tujuan penelitian ini dilakukan untuk mengetahui seberapa besar pengaruh perawatan terhadap performa unit. Baik tidaknya suatu performa dilihat dari parameter-parameter yang terukur seperti selisih temperatur pada evaporator, kondenser, konsumsi daya, kapasitas pendinginan, efisiensi dan *COP (coefficient of performance)*. Pengamatan yang paling utama dalam penelitian ini yaitu COP dan nilai efisiensi air. Rata-rata nilai COP Aktual sebelum perawatan 3,382 dan 3,552 setelah perawatan. Nilai efisiensi air sebelum perawatan adalah 0,35 kW/kW atau 0,102 kW/TR menjadi 0,235 kW/kW atau 0,078 kW/TR. Biaya operasional sebelum perawatan rata-rata adalah Rp Rp19.518.587,38 menjadi Rp14.975.364,05 perbulan nya. Sehingga selain perfoma yang menjadi lebih baik juga dapat mengurangi biaya perbulan nya. Nilai efisiensi sisi refrigerasi pun dapat dikatakan baik karena mencapai nilai hampir 55%.

**Kata kunci:** *Air Cooled Chiller, preventive maintenance*, efisiensi, biaya operasional

## **ABSTRACT**

*This report is about the impact of Preventive Maintenance on the performance of the AirCooled Chiller. The research was carried out at the Radioisotope and Radiofarmaceutical Technology Facility of the National Research and Innovation Agency, the performance of the chiller unit became dissatisfactory due to the lack of maintenance. The purpose of this study was conducted to determine how much maintenance affects the performance of the unit. Whether or not a performance is seen from measurable parameters such as temperature difference in evaporator, condenser, power consumption, cooling capacity, efficiency and COP (coefficient of performance). The most important observations in this study are COP and water efficiency values. The average Actual COP value before treatment was 3.382 and 3.552 after treatment. The water efficiency value before treatment was 0.35 kW/kW or 0.102 kW/TR to 0.235 kW/kW or 0.078 kW/TR. The average operating cost before treatment was Rp. 19,518,587.38 to Rp. 14,975,364.05 per month. So that in addition to better performance can also reduce costs per month. The efficiency value of the refrigeration side can be said to be good because it reaches a value of almost 55%.*

**Keywords:** *Air Cooled Chiller, preventive maintenance, efficiency, cost operation*