ABSTRACT

Each component in the unit has a certain lifetime, so it is necessary to carry out maintenance on these components to maintain the performance of the unit. In carrying out maintenance, PT Cipta Kridatama prepares a maintenance plan or called a maintenance strategy. Maintenance strategy is developed for each component including the hydraulic cylinder. In 2021, there was a change in the maintenance strategy applied to hydraulic cylinder components. From initially using the repair after failure strategy to repair before failure. The purpose of this study is to analyze which maintenance strategy is better.

The method used in this study is to compare the maintenance costs between the repair maintenance strategy after failure and the repair maintenance strategy before failure for the hydraulic cylinder exhaust unit for one period of 25,000 unit working hours. In testing the effectiveness based on the physical availability value, a summary of the kpi unit data is calculated between the two maintenance strategies for one and a half years each.

In this study, it was found that changing the maintenance strategy for hydraulic cylinders could incur maintenance costs of $43,648 - or 67% of the maintenance costs of the previous strategy. Then it is also known that from changes in maintenance strategy, there is an increase in the availability of physical value. From the maintenance strategy repair after failure with an average PA value of 85% to 90,8% with the maintenance strategy repair before failure. Overall, it can be concluded that using a repair maintenance strategy before failure for hydraulic cylinders is more effective in terms of maintenance costs and PA value.

Keywords: hydraulic cylinder; maintenance cost; maintenance strategy; physical availability

INTISARI

Setiap komponen pada unit memiliki umur pakai tertentu, sehingga perlu dilakukan perawatan pada komponen tersebut untuk menjaga performa dari unit. Dalam melakukan perawatan, PT Cipta Kridatama menyusun suatu rancangan perawatan atau disebut *maintenance strategy*. *Maintenance strategy* disusun untuk setiap komponen termasuk *hydraulic cylinder*. Pada tahun 2021, terjadi perubahan *maintenance strategy* yang diterapkan untuk komponen *hydraulic cylinder*. Dari yang semula menggunakan strategi *repair after failure* menjadi *repair before failure.* Tujuan dari penelitian ini yaitu untuk menganalisa *maintenance strategy* manakah yang lebih baik.

Metode yang digunakan pada penelitian ini yaitu dengan membandingkan biaya perawatan antara *maintenance strategy repair after failure* dan *maintenance strategy repair before failure* untuk *hydraulic cylinder* selama satu kali masa disposal unit yaitu selama 25.000 jam kerja unit. Pada pengujian efektivitas berdasarkan nilai *physical availability* dilakukan perhitungan dengan data *summary kpi* unit antara kedua *maintenance strategy* masing-masing selama satu setengah tahun.

Pada penelitian ini didapatkan bahwa perubahan *maintenance strategy* untuk *hydraulic cylinder* dapat memangkas biaya perawatan sebesar $ 43.648,72 atau 67% dari biaya perawatan *maintenance strategy* sebelumnya. Kemudian diketahui pula dari perubahan *maintenance strategy,* terjadi peningkatan pada nilai *physical availability.* Dari *maintenance strategy repair after failure* dengan rata-rata nilai PA sebesar 85% menjadi 90,8% dengan *maintenance strategy repair before failure.* Secara keseluruhan dapat disimpulkan bahwa menggunakan *maintenance strategy repair before failure* untuk *hydraulic cylinder* lebih efektif dari segi biaya perawatan dan nilai PA.

Kata kunci: biaya perawatan; *hydraulic cylinder; maintenance strategy; physical availability*