

ABSTRACT

The McDonald's located in Ancol experienced the highest amount of frequency maintenance AC during the time span of 2022. This restaurant has the highest history of damages among other restaurants due to its location on the beachfront. Based on the obtained data, the fan motor and compressor have the highest history of failures. The critical components of the air conditioner are determined using FMECA by calculating the RPN value. The selected critical components of the air conditioner are the fan motor and compressor. In this study, the author uses two methods: reliability risk-centered maintenance (RRCM) and reliability-centered spares (RCS). The RRCM method aims to determine the repair interval for each critical component and optimize costs, while the RCS method aims to determine the quantity of critical components needed in the next year. After processing the data using the RRCM method, three (3) proposed maintenance tasks are obtained, consisting of two (2) scheduled on-condition tasks and one (1) scheduled discard task. For the scheduled on-condition task on the Fan Motor component, in the case of motor failure, regular checks are conducted every 2 weeks. For the compressor component, in the case of compressor clogging failure mode, regular checks are performed every 4 weeks. For the scheduled discard task on the Fan Motor component, in the case of fan rust failure mode, component replacement is carried out every 5 weeks. The total proposed maintenance cost is Rp24.446.500 while the actual total maintenance cost for the company is Rp28.207.500 . Therefore, the proposed maintenance cost is lower by approximately Rp3.761.000, resulting in cost savings compared to previous expenses.

Keywords: *Preventive Maintenance, Reliability and Risk Centered Maintenance, Reliability Centered Spares, AC*