

ABSTRACT

PT. Cullet Prima Setia is a private company specializing in glassware industry, where companies use production system with engine units that are expensive and have a high risk in the production process so that the machine must be able to produce products according to the amount and types of customer's request. In producing glassware needed machines that have high performance. If there is a machine that was damaged suddenly, the engine performance will decrease, resulting in decreased system performance, delays in the production process, and the financial losses for the company, so the company needs to be done to determine the engine performance measurement system performance with methods Reliability, Availability and Maintainability Analysis (RAM Analysis). In the machinery required for the production process is in good condition. When the engine failed it will disrupt the activity distribution of glassware to the customer. Aging and the increasing hazard rate engine from the engine will occur, it is necessary to do the calculation and optimization of the amount of maintenance crew optimum engine life using Life Cycle Cost.

Based on the calculation of operational availability is known that the operational availability of existing on-line printing production of 96.44%, this shows that the system can operate for a maximum of 352 days in a year. Then do the increased availability with redundancy machine using one of the methods RAM Analysis is minimal cut sets obtained operational availability on the production line printing of 99.46%. Operational value of 99.46% availability, this shows that the system can operate a maximum of 363 days in a year. Increase the availability of existing proposals availability rose by 3.02%. Based on Life Cycle Cost calculations obtained the smallest total cost is Rp 25.624.489.530,57. At the smallest total Life Cycle Cost is the optimize of the number 1 team of maintenance crew, engine age 6 years and the number of machines 16 units. If the useful life will be extended to 10 years, the total Life Cycle Cost will increase by 23%.

Keywords: Availability, LCC, RAM Analysis, Optimize