ABSTRACT

PT.ABC is one of the textile companies located in Majalaya, Bandung Regency, West Java Province established since 1976. In the production process one of the important role is the process of dyeing. Production activity is demanding enterprise machines to operate properly. The CUT-SX jet dyeing machine has a frequency 130 times of downtime and total downtime 212.23 hours, making it the highest downtime when compared to other jet dyeing machines in the Dyeing Unit in the period of 2011-2017. To solve this issue, the company needs activities of maintenance on the jet dyeing machine. To determine the amount of maintenance crew and the retirement age of machine, the method that is needed is Life Cycle Cost (LCC). To get the total of LCC, the cost of processing required by the LCC method which are sustaining cost and acquisition cost. Another method used is Replacement Analysis (RA) to determine the policy of replacing old existing assets (defender) with the new (challenger) assets or maintaining old assets in addition to several time periods. Based on the LCC method, the lowest LCC total amount is Rp 3.686.795.153,- with the optimal retirement age is eleven years and the optimal maintenance crew is four people in each shift. Based on the RA method, the results of the calculation of the defender machine obtained the minimum of equivalent annual cost is Rp 2.130.594.375,- in the first year and increased in next years, which means that they no longer have economic life. Meanwhile, the results of the calculation of the challenger machine obtained the minimum of equivalent annual cost is Rp 1.691.032.467,- with an economic life up to 6 years or 2023. Because of the equivalent annual cost of challenger is smaller, the company should sell the old machine and replace it with a new one.

Key Words : Life Cycle Cost, Retirement Age, Optimal Maintenance Set Crew, Replacement Analysis, Equivalent Uniform Annual Cost