

## ***ABSTRACT***

*Accu Battery is one of the most important components in the vehicle system. PT XYZ is one of the largest manufacturing industries that produces the largest Accu Battery in Indonesia. Based on data from GAIKINDO 55% of car sales in Indonesia from 2016 to 2017 using batteries manufactured by PT XYZ. In operating the machinery and equipment, PT XYZ requires a good and optimal machine maintenance system. Especially on the Dumping machine in line 1 which has the highest downtime frequency in 2016 until 2017 which amounted to 292 damage. Therefore it is necessary to analyze Reliability, Availability, Maintainability (RAM) with Reliability Block Diagram (RBD) modeling and Life Cycle Cost (LCC) analysis to know Dumping Line 1 machine performance. Based on performance measurement using RAM method, the value of reliability system is 61.94% at  $t = 112$  hours and to achieve 100% maintainability it takes for 4 hours with the inherent availability value of 99.81% and operational availability of 99.72%. From the results of evaluations that have been done based on company policy and Key Performance Indicator IVARA as the parameters of success, indicator availability has reached the indicator target of 95%. From the calculation with LCC method, obtained the smallest Life Cycle Cost value of Rp646.175.379,30,- with the optimal age of the machine for seven years and the number of maintenance crew as much as one person.*

***Keywords: Reliability, Availability, Maintainability, Reliability Block Diagram, Life Cycle Cost, Key Performance Indicator.***