

## ABSTRACT

*PT Indo Integral Sekawan is an outsourcing company that offers manufacturing spare parts and forging Dies. In producing Dies forging products PT IIS uses Milling machines, lathes, and CNC 20-L Liqy Hising machines. Based on machine failure data, Milling Machines suffered a total of 27 times failure during the 2018-2019 period, the frequency of failure will affect the production process and resulted in large maintenance costs. Thus, it takes more observation regarding the maintenance of the Milling machine. The method used for research is Risk-based maintenance (RBM) which aims to estimate and minimize risks arising from failure. The results of collection and processing using RBM revealed that Milling machines with 2880 hours maintenance intervals had a total risk of Rp6,395,124.84 with the percentage of 0.67% exceeding the company's risk tolerance limit of 0.50%. Using the approach to minimizing risks, the proposed maintenance interval is 1100 hours and is at the company's risk acceptance criteria of 0.50%. This study also uses the Analytical Hierarchy Process (AHP) method which decides the maintenance policies that are tailored to the company's conditions, for Spindel components and rags using condition-based maintenance, and coolant hose components using time-based maintenance.*

*Keywords: Milling machines, Risk Priority Number, Risk Based Maintenance, Analytical Hierarchi Process, Maintenance policy.*