ABSTRACT

PT.Waja Teknik Cikarang *is a company engaged in machining and forging services. CNC milling machine maintenance process of PT. Waja Cikarang Engineering is done in a period of approximately three months. Scheduling of maintenance for replacement of engine components in PT. Waja Cikarang Engineering is not well integrated. On CNC milling machines precisely Makino CNC milling machines often occur erorr in mechanical engine components such as spindLe, X axis servo, Y axis servo, and servo axis Z.*

The maintenance process implemented by PT Waja Teknik Cikarang *uses corrective maintenance.* Makino *CNC milling machines experience downtime, the production process will be stopped until the machine is repaired and can operate again. The constraints that occur on CNC milling machines at* PT Waja Teknik Cikarang *can be overcome by implementing a preventive maintenance system or preventive maintenance efforts. This maintenance system is carried out before an error occurs in the engine components and also carried out at a predetermined time interval to improve engine reliability by using reliability centered maintenance.*

Based on the identification of the problem, the factors causing the downtime of the Makino *CNC milling machine are due to damage to the spindle, X, Y, Z axis, slurry and machine table components. The RPN value of each component is 96.96.96.96.72 and 36. The compilation of logic tree analysis consists of two categories with percentage D (33.4%) and B (66.6%). Maintenance plans based on TD are spindles with 122 hours, X 1067 hours servo axis, 397 hours Y axis servo, and 642 hours Z axis servo.*

Keywords: Manufacturing process, CNC milling, downtime, Preventive maintenance, Reliability centered maintenance (RCM).