

ABSTRACT

PT CMP is a construction and heavy equipment business that is rapidly growing in Tangerang City. This company produces spare parts for various types of heavy equipment used in the mining and construction industries. This research focuses on maintaining cutting machines in a way that hinders them from operating at their best. Shearing Amada is the cutting machine that is notorious for performing subparly. The method research used is the measurement of *Overall Equipment Effectiveness* (OEE) and *Overall Equipment Cost Loss* (OECL). Based on the OEE calculation results on the Shearing Amada machine in November 2021 - October 2022, which is 56%, it can be seen that the OEE value is still below the *Japan Institute of Plant Maintenance* (JIPM) standard, which is 85%. Meanwhile, based on the calculation of the *Six Big Losses* to determine the loss factors that arise from the production process, it shows that there are dominant loss factors that greatly affect the effectiveness of the Shearing Amada machine, namely the high *Reduced Speed Loss value* of 25.7% and *Idle/Stop Loss* of 20.4%. The cause of the low effectiveness of the machine based on the fishbone diagram is influenced by human factors, machines, materials and methods. Based on OECL calculations, it is known that the total cost of losses incurred by the company is Rp1.376.613.281,00. The low OEE value and high loss costs can be used as an evaluation to increase the effectiveness of Amada Shearing machines with an integrated system design. The integrated system consists of human, machine and method aspects in the form of a TPM-based maintenance system design. The pillars of TPM which are used to solve the problem of low machine effectiveness, namely *Autonomous maintenance*, *Planned maintenance*, and *Quality maintenance*.

Keywords: *Fishbone Diagram*, *Overall Equipment Effectiveness (OEE)*, *Overall Equipment Cost Loss (OECL)*, *Six Big Losses*, *Total Productive Maintenance (TPM)*.