

ABSTRAK

Amira Mawaddah : Analisis Efektivitas pada Mesin Plasma *Cutting* Menggunakan Metode *Overall Equipment Effectiveness* (OEE) dan *Fault Tree Analysis* (FTA) (Studi Kasus : PT Metal Hitech Engineering, Cerme-Gresik)

Overall Equipment Effectiveness (OEE) merupakan metode yang digunakan untuk mengukur tingkat efektifitas pemanfaatan peralatan atau mesin. Penelitian ini dilakukan pada mesin plasma *cutting* pada PT Metal Hitech Engineering. Hal ini dilakukan karena mesin plasma *cutting* sering mengalami macet serta kerusakan lainnya yang mempengaruhi proses produksi. Sehingga perlu dilakukan perhitungan OEE untuk mengetahui nilai serta upaya perbaikan guna meningkatkan nilai OEE dan hasil produksi yang optimal. Hasil penelitian yang dilakukan selama periode Agustus-Oktober 2020 diketahui bahwa rata-rata nilai OEE pada mesin plasma *cutting* sebesar 76%. Faktor *six big losses* yang sangat mempengaruhi rendahnya nilai efektifitas pada mesin plasma *cutting* adalah *reduced speed losses* dengan kerugian sebesar 10,8%, diikuti dengan faktor kerugian yang lain seperti *breakdown losses* sebesar 6,2%, *setup and adjustment losses* sebesar 2,2%, *idle and minor stoppages losses* sebesar 2,6%, serta *process defect losses* sebesar 2,1%. Usulan perbaikan melalui hasil analisa menggunakan metode *fault tree analysis* adalah dengan eliminasi *six big losses* dengan cara meningkatkan *preventive maintenance* dan memberikan pelatihan untuk kemampuan para pekerja.

Kata kunci: *Overall Equipment effectiveness* (OEE), *Six Big Losses*, *Fault Tree Analysis* (FTA)

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Overall Equipment Effectiveness (OEE) is a method used to measure the level of effectiveness of equipment or machine utilization. This research was conducted on a plasma cutting machine at PT Metal Hitech Engineering because plasma cutting machines often experience jams and other damage that affects the production process. So it is necessary to calculate OEE to determine the value and improvement efforts in order to increase the value of OEE and optimal production results. The results of research conducted during the period August-October 2020 note that the average OEE value on the plasma cutting machine was 76%. The six big losses factor that greatly influenced the low effectiveness value of the plasma cutting machine was reduced speed losses with a loss of 10.8%, followed by other loss factors such as breakdown losses of 6.2%, setup and adjustment losses of 2.2%. , idle and minor stoppages losses by 2.6%, and process defect losses by 2.1%. Proposed improvements through the analysis using the fault tree analysis method is to eliminate six big losses by increasing preventive maintenance and providing training for the abilities of workers.

Keywords: Overall Equipment effectiveness (OEE), Six Big Losses, Fault Tree Analysis (FTA)