ABSTRAK

PENGUKURAN EFEKTIVITAS MESIN *CONTINOUS* MENGGUNAKAN METODE *OVERALL RESOURCE EFFECTIVENESS (ORE)* DAN ANALISIS KERUGIAN UNTUK MELAKUKAN EVALUASI KINERJA (Studi Kasus : PT. ABC)

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PT. ABC merupakan perusahaan yang bergerak di industri logam yang memproduksi genteng berlapis butiran batuan. Permasalahan yang sering terjadi di PT ini adalah mesin yang sering mengalami *downtime* sehingga menyebabkan tidak tercapainya target produksi. Mesin tersebut adalah mesin *continuous* C05 dan C06, merupakan mesin yang digunakan untuk melapisi genteng dengan butiran batuan. Kerusakan pada mesin dapat menyebabkan terganggunya proses produksi dan menimbulkan kerugian biaya yang ditanggung oleh perusahaan. Penelitian ini bertujuan untuk menganalisis penyebab menurunnya efektifitas mesin *continuous* tersebut dan menghitung biaya kerugian dari terjadinya aktivitas yang menyebabkan kegagalan serta *downtime*, sehingga dapat memberikan solusi perbaikan untuk meningkatkan produktivitas. Penelitian ini menggunakan metode *Overall Resource Effectiveness (ORE), Failure Mode and Effect Analysis (FMEA)* dan *Activity Based Costing (ABC)*. Hasil penelitian menunjukkan nilai *ORE* Mesin C05 dan C06 dari bulan Juni 2022 hingga Maret 2023 sebesar 45.99% dan 44.01%, dimana hasil ini masih dibawah standar *JIPM* sebesar ≥ 85%. Penyebab rendahnya nilai *ORE* kedua mesin ini disebabkan oleh 3 faktor *ORE* yang masih dibawah standar, yaitu faktor *readiness, availability of facilities* dan *performanc*e. Hasil analisis *FMEA* didapatkan *RPN* tertinggi untuk faktor *readiness* sebesar 280 penyebabnya dikarenakan menunggu *plan* produksi. *Availability of facilitiy* sebesar 324 penyebabnya dikarenakan *downtime* dan *breakdown* mesin. *Performance* sebesar 360 penyebabnya adalah menurunnya kecepatan mesin. Dan hasil perhitungan *ABC* untuk besarnya kerugian akibat kegagalan mesin C05 sebesar Rp 3.545.930.100 dan mesin C06 sebesar Rp 3.762.154.650. Sehingga upaya perbaikan yang dapat diberikan untuk meningkatkan efektifitas kedua mesin adalah dengan menerapkan pilar-pilar *TPM* seperti *autonomous maintenance, office TPM*, dan *planned maintenance*.

Kata Kunci: *Total Productive Maintenance (TPM), Overall Resource Effectiveness (ORE), Failure Mode And Effect Analysis (FMEA), Activity Based Cost(ABC)*

ABSTRACT

MEASUREMENT OF CONTINUOUS MACHINES USING THE OVERALL RESOURCE EFFECTIVENESS (ORE) METHOD AND LOSS ANALYSIS TO CONDUCT PERFORMANCE EVALUATION
(Case Study: PT. ABC)

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ABC company is a company engaged in the metal industry that produces roof tiles covered with rock grains. The problem that often occurs at this company is machines that often experience downtime, causing production targets to not be achieved. These machines are C05 and C06 continuous machines, which are machines used to coat roof tiles with rock grains. Damage to the machine can disrupt the production process and cause a loss of costs borne by the company. This study aims to analyze the causes of the decrease in the effectiveness of the continuous machine and calculate the costs of losses from activities that cause failure and downtime, so that they can provide corrective solutions to increase productivity. This research uses Overall Resource Effectiveness (ORE), Failure Mode and Effect Analysis (FMEA) and Activity Based Costing (ABC) methods. The results showed that the ORE values for Machines C05 and C06 from June 2022 to March 2023 were 45.99% and 44.01%, where these results were still below the JIPM standard of ≥ 85%. The reason for the low ORE values of these two machines is due to 3 ORE factors which are still below standard, namely readiness, availability of facilities and performance factors. The results of the FMEA analysis found that the highest RPN for the readiness factor was 280 because it was due to waiting for a production plan. Availability of facilities of 324 causes due to downtime and machine breakdown. Performance of 360 causes is the decrease in engine speed. And the results of the ABC calculation for the amount of loss due to the failure of the C05 engine is Rp. 3,545,930,100 and the C06 engine is Rp. 3,762,154,650. So the improvement efforts that can be given to increase the effectiveness of the two machines are by implementing TPM pillars such as autonomous maintenance, office TPM, and planned maintenance.

Keywords: *Total Productive Maintenance (TPM), Overall Resource Effectiveness (ORE), Failure Mode And Effect Analysis (FMEA), Activity Based Cost (ABC)*