# ABSTRAK


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Program Studi : Teknik Industri

Judul Laporan Skripsi : Analisis Peningkatan Efektivitas Mesin *Big Cutter* dengan Metode *Overall Equipment Effectiveness* (OEE) dan *Failure Mode and Effect Analysis* (FMEA) pada Area Finishing di PT. Indah Kiat Pulp and Paper, Tbk
Pembimbing : Ir. Muhammad Kholil, M.T.,PhD.


PT. Indah Kiat Pulp & Paper merupakan sebuah perusahaan manufaktur penghasil kertas. Jenis kertas yang dihasilkan sangat bervariasi salah satunya jenis *big sheet* yang dihasilkan oleh mesin *big cutter*. Berdasarkan data yang didapatkan pada mesin *big cutter* periode Mei – Oktober 2022 pada area finishing, mesin *big cutter* memiliki *downtime* yang sangat tinggi dibandingkan dengan *planned downtime*, sehingga membuat target produksi tidak tercapai karena mesin tidak berjalan dengan optimal. Tujuan dari penelitian ini yaitu menganalisis nilai effektivitas mesin *big cutter*, mengidentifikasi *losses* tertinggi pada mesin *big cutter* yang memiliki nilai efektivitas terendah, serta memberikan usulan perbaikan. Salah satu metode pengukuran efektivitas mesin yaitu *Overall Equipment Effectiveness* (OEE). Metode *overall equipment effectiveness* (OEE) metode pengukuran efektivitas perusahaan untuk menilai seberapa baik kinerja suatu mesin. Selain itu penggunaan metode FMEA diperlukan untuk mengidentifikasi dan menentukan prioritas perbaikan. Hasil penelitian menunjukan bahwa mesin *big cutter* 5 memiliki nilai *overall equipment effectiveness* (OEE) paling rendah yaitu 32%. *Losses* yang mempengaruhi nilai efektivitas mesin *big cutter* 5 berdasarkan perhitungan *six big losses* yaitu *reduce speed losses* yang memiliki presentase sebesar 44%. Selanjutnya dilakukan analisa dengan FMEA berdasarkan akar masalah pada *fishbone diagram*. Berdasarkan nilai RPN pada analisis FMEA terdapat 6 skala tertinggi prioritas usulan perbaikan. Usulan perbaikan yang dapat diberikan yaitu menambahkan alat bantu seperti *hydraulic lifting trolley*, membuat jadwal pengecekan komponen mesin *big cutter 5*, memastikan sistem sebelum mesin beroperasi, mengadakan pelatihan kepada operator secara rutin, memperbarui sistem perawatan sesuai dengan kondisi, mengganti pisau *slitter* dan pisau *cutter* serta membuat jadwal untuk melakukan pengecekan rutin.



Kata Kunci: Kertas, Mesin, *Overall Equipment Effectiveness*, *Six Big Losses*, FMEA

## ABSTRACT


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| Name | : Rachmatika Anantia Agustin |
| NIM | : 41619010021 |
| Study Program | : *Industrial Engineering* |
| Title Internship Skripsi | : *Analysis of Increasing the Effectiveness of the Big Cutter Machine with the Overall Equipment Effectiveness (OEE) Method and Failure Mode and Effect Analysis (FMEA) in Finishing Areas at PT. Indah Kiat Pulp and Paper, Tbk* |
| Counsellor | : Ir. Muhammad Kholil, M.T.,PhD. |



*PT. Indah Kiat Pulp & Paper is a paper manufacturing company. The type of paper produced varies greatly, one of which is the big sheet type produced by the big cutter machine. Based on data obtained on big cutter machines for the period May – October 2022 in the finishing area, big cutter machines have very high downtime compared to planned downtime, resulting in production targets not being achieved because the machines are not running optimally. The purpose of this study is to analyze the effectiveness value of the big cutter machine, identify the highest losses on the big cutter machine which has the lowest effectiveness value, and provide suggestions for improvements. One method of measuring machine effectiveness is Overall Equipment Effectiveness (OEE). The overall equipment effectiveness (OEE) method is a method of measuring the effectiveness of a company to assess how well a machine is performing. In addition, the use of the FMEA method is needed to identify and determine priority improvements. The results showed that the big cutter 5 machine has the lowest overall equipment effectiveness (OEE) value of 32%. Losses that affect the effectiveness of the big cutter 5 machine are based on the calculation of six big losses, namely reduced speed losses which have a percentage of 44%. Furthermore, an analysis with FMEA is carried out based on the root of the problem in the fishbone diagram. Based on the RPN value in the FMEA analysis, there are 6 highest priority scales for improvement proposals. Proposed improvements that can be given are adding tools such as hydraulic lifting trolleys, making a schedule for checking big cutter 5 engine components, ensuring the system before the machine operates, conducting routine operator training, updating the maintenance system according to conditions, replacing the slitter knife and cutter knife and Make a schedule for routine checks.*



*Keywords: Paper, Machine, Overall Equipment Effectiveness, Six Big Losses, FMEA*