

## ABSTRAKSI

Nama : Dwiputri Handayani Nurmastura  
Program Studi : Teknik Industri  
Judul : Usulan Perbaikan Sistem Perawatan Komponen Kritis Mesin *Casting* Dengan Metode *Reliability Centered Maintenance* (RCM) Di PT.Trafoindo Prima Perkasa

PT.Trafoindo Prima Perkasa merupakan produsen trafo distribusi, produk yang dihasilkan antara lain trafo *oil*, trafo *dry type* dan trafo *instrument* (CT dan VT). Berdasarkan laporan dari pihak *maintenance* pada unit produksi trafo *dry type* periode Januari 2017 sampai Desember 2019 terdapat mesin yang mengalami waktu *downtime* tertinggi yaitu terjadi pada mesin *Casting* sebesar 739 jam. Terjadinya *downtime* dapat menyebabkan proses produksi terhenti serta menyebabkan terganggunya jalan proses produksi dalam mencapai target yang telah ditetapkan. Oleh sebab itu harus dilakukan pencegahan *downtime* dengan cara menentukan komponen kritis untuk membuat interval waktu perawatan preventif pada mesin. Metode yang digunakan untuk menyelesaikan masalah adalah *Reliability Centered Maintenance* (RCM). Perhitungannya dilakukan dengan cara menentukan komponen kritis menggunakan *Failure Modes and Effect Analyze* (FMEA) dengan melihat RPN yang paling tinggi, setelah itu menghitung persentase *downtime* dan membuat diagram pareto. Dari hasil penelitian yang diperoleh interval waktu perawatan mesin secara preventif untuk komponen *Thermocouple* adalah setiap 67.584 jam, komponen *Ball Valve* adalah setiap 70.661 jam dan komponen *Gear Box* adalah setiap 91.104 jam.

**Kata kunci:** Perawatan Preventif, Komponen Kritis, Keandalan, *Reliability Centered Maintenance* (RCM)



## **ABSTRACT**

*Students' Name* : Dwiputri Handayani Nurmastura  
*Program Study* : *Industrial Engineering*  
*Title* : *Proposed the Improvement of Maintenance System in the Critical Components of Casting Machine Using Reliability Centered Maintenance (RCM) at PT. Trafoindo Prima Perkasa.*

*PT. Trafoindo Prima Perkasa is a manufacturer of transformer distribution, products which produced that are transformer oil, dry type transformer, and instruments of the transformer (CT and VT). Based on the report from the maintenance department in the units of dry type transformer from January 2017 until December 2019, some machines experienced the highest downtime, that occurs on the Casting machine by 739 hours. The downtime can affect the process of production and disrupted the process of production to achieve a set goal. The downtime preventive activities must be accomplished by choosing the critical components to make the time interval of preventive maintenance on the machine. The Reliability Centered Maintenance has chosen as the research method to solve the problems. The calculations are done by determining the critical components using Failures Modes and Effect Analyze (FMEA) by looking at the highest RPN, then calculated the downtime percentage, and created a Pareto diagram. According to the research findings, it obtained the time interval of preventive maintenance on the machine preventively for Thermocouple components were each 67.584 hours, Bali Valve components were every 70.661 hours, and the Gearbox components were each 91.104 hours.*

**Keywords:** *Preventive maintenance, Critical components, Reliability, Reliability Centered Maintenance (RCM).*