ABSTRAK

Permintaan produk *diapers* yang tinggi di masyarakat mendorong perusahaan untuk meningkatkan kapasitas produksi, termasuk pada mesin *diapers* L3 pada PT Aman Indah Makmur. Namun, tingginya jam kerja mesin berbanding lurus dengan peningkatan *downtime* yang tercatat sebesar 80,72 jam selama Januari–Juni 2024. Hal ini menyebabkan keterlambatan produksi dan potensi kerugian. Tujuan penelitian untuk menyusun penjadwalan *maintenance* yang tepat guna meminimalkan *downtime* mesin *diapers* L3. Metode yang digunakan adalah *Reliability Centered Maintenance* II (RCM II) dan *Failure Mode, Effects and Criticality Analysis* (FMECA). Analisis dilakukan melalui tahapan identifikasi sistem, perhitungan TTF dan TTR, pemilihan distribusi kegagalan, serta penentuan interval perawatan berdasarkan task keandalan (*scheduled discard*, *restoration*, dan *on-condition*). Hasil analisis menunjukkan total 14 komponen yang dianalisis, lima komponen tersebut memiliki nilai *criticality* paling tinggi, sedangkan sisanya berada dalam kategori sedang dan rendah. Secara keseluruhan, penjadwalan *maintenance* yang diusulkan dapat meminimasi *downtime* dari 80,72 jam menjadi 39,62 jam (turun 50,91%). Penjadwalan disusun secara terintegrasi untuk meningkatkan keandalan mesin dan menurunkan potensi *downtime*. Penerapan penjadwalan, diharapkan dapat meningkatkan efisiensi operasional dan menjaga produksi secara optimal.

Kata kunci: RCM II, FMECA, *downtime*, penjadwalan *maintenance*.

ABSTRACT

The high demand for diaper products in the community encourages companies to increase production capacity, including the use of the Diapers L3 machine at PT Aman Indah Makmur. However, the increase in machine operating hours has led to a rise in downtime, which reached 80.72 hours during the period of January–June 2024. This has caused production delays and potential losses. The objective of this research is to develop an effective maintenance schedule to minimize the downtime of the Diapers L3 machine. The methods used are Reliability Centered Maintenance II (RCM II) and Failure Mode, Effects and Criticality Analysis (FMECA). The analysis includes system identification, calculation of Time to Failure (TTF) and Time to Repair (TTR), selection of failure distributions, and determination of maintenance intervals based on reliability tasks (scheduled discard, restoration, and on-condition). The results show that a total of 14 components were analyzed, with five identified as having the highest criticality level, while the rest fall under moderate and low categories. Overall, the proposed maintenance schedule can reduce downtime from 80.72 hours to 39.62 hours a 50.91% reduction. The schedule is structured in an integrated manner to enhance machine reliability and reduce potential downtime. The implementation of this schedule is expected to improve operational efficiency and maintain optimal production continuity.

Keywords: RCM II, FMECA, downtime, maintenance scheduling.