

Perencanaan Peningkatan Efektivitas Mesin Pengisian Lithos dengan Metode Overall Equipment Effectiveness (OEE) = Improvement Effectiveness Planning of Lithos Filling Machines with Overall Equipment Effectiveness (OEE) Method

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Abstrak

Permintaan pelumas di Indonesia setiap tahun semakin meningkat, dan saat ini sudah mencapai 1,3KL/tahun. Namun, kemampuan dalam negeri hanya mampu memproduksi sekitar 900 ribu KL/tahun. Pemegang pangsa pasar terbesar di Indonesia untuk industri pelumas adalah PT. Pertamina Lubricants, sebesar 58%. Untuk memenuhi permintaan tersebut, Unit Produksi PT. Pertamina Lubricants harus memiliki sistem produksi yang efektif dan efisien. Salah satu metode untuk menganalisis tingkat efektivitas suatu mesin atau lini produksi adalah dengan menggunakan Overall Equipment Effectiveness (OEE). PT. Pertamina Lubricants menetapkan target OEE sebesar 70%. Namun, selama Januari 2021 hingga Juli 2021, OEE tertinggi hanya mencapai 67%. Dalam penelitian ini, studi komprehensif dilakukan di Production Unit Jakarta (PUJ) PT. Pertamina Lubricants untuk mencari faktor utama penyebab rendahnya nilai efektivitas khususnya pada filling line 04 (FL-04). Nilai OEE tertinggi diperoleh pada Agustus 2021 hingga Februari 2022 hanya mencapai 69,05%. Kerugian signifikan utama di FL-04 adalah Idling and Minor Stop Losses, serta Setup and Adjustment Losses, berdasarkan teori Six Big Loss dan Diagram Pareto. Akar masalah ditemukan dengan menggunakan diagram Fishbone. Penilaian Failure Mode and Effects Analysis (FMEA) dilakukan sebagai saran untuk meningkatkan efektivitas PUJ. Sepuluh solusi diusulkan berdasarkan sepuluh mode kegagalan. Beberapa solusi sementara diterapkan di PUJ selama kurang lebih tiga minggu, dan ditemukan bahwa nilai OEE pada FL-04 setelah perbaikan sedikit meningkat sekitar 2% dari rata-rata nilai OEE dari Agustus 2021 hingga Februari 2022.

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The demand for lubricants in Indonesia is increasing every year, and now it has reached 1.3KL/year. However, the domestic capability is only capable of producing around 900 thousand KL/year. The largest market share holder in Indonesia for the lubricant industry is PT. Pertamina Lubricants, by 58%. To meet the demand, the Production Unit of PT. Pertamina Lubricants must have an effective and efficient production system. One of the methods to analyze the level of effectiveness of a machine or production line is to use Overall Equipment Effectiveness (OEE). PT. Pertamina Lubricants set an OEE target of 70%. However, during January 2021 to July 2021, the highest OEE only reached 67%. In this research, a comprehensive study was conducted at the Production Unit Jakarta (PUJ) of PT. Pertamina Lubricants to seek the main factors that cause the low value of the effectiveness, especially in filling line 04 (FL-04). The highest OEE value obtained from August 2021 to February 2022 only reached 69.05%. The main significant losses in FL-04 are Idling and Minor Stop Losses, and Setup and Adjustment Losses, based on the theory of Six Big Losses and Pareto Diagrams. The root of the problem was found using the Fishbone diagram. The Failure Mode and Effects Analysis (FMEA) assessment was made for suggestions to improve the effectiveness in PUJ. Ten solutions were proposed based on ten failure modes. Several temporary solutions were implemented at PUJ for about three weeks, and it was found that the OEE value on FL-04 after the

repair was a slight increase of about 2% from the average OEE value from August 2021 to February 2022.