PERENCANAAN PERAWATAN MESIN KETEL UAP MENGGUNAKAN METODE RELIABILITY CENTERED MAINTENANCE DI PT SULTRA PRIMA LESTARI SULAWESI

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ABSTRAK

Mesin dan peralatan kerja yang mendukung akan membuat proses produksi berjalan dengan maksimal. Kerusakan mesin produksi menyebabkan kegiatan produksi terhenti, kualitas produksi menurun bahkan mengancam keselamatan pekerja. PT Sultra Prima Lestari mengalami *downtime* sebanyak 94 kali terhadap mesin ketel uap pada tahun 2019-2022. Tidak adanya tindakan perawatan yang terjadwal dapat mengakibatkan kerusakan fasilitas dan mesin yang sangat merugikan. Dari masalah tersebut diperlukan tindakan dengan menggunakan metode *Reliability Centered Maintenance* yaitu tindakan utama preventive maintenance yaitu mencegah dan meminimalisasi konsekuensi kegagalan yang muncul, sehingga dapat meningkatkan reliability dan safety mesin tersebut. kegagalannya dapat membuat seluruh bagian/perangkat mesin lainnya terkedala. Steam Drum terjadi gagal sirkulasi air, mud drum terjadi korosi dan economizer gagalan akibat korosif. Pada hasil FMEA dimana komponen kritis yang paling utama dan memiliki prioritas paling tinggi adalah steam drum yang mengalami gagal sirkulasi air, mud drum mengalami korosi dan economizer mengalami korosif. Pada *time directed* (TD) perlu dilakukan perbaikan komponen mesin dengan prioritas tertentu yaitu tindakan-tindakan perawatan *time directed* (TD) pada mesin ketel uap. Dengan demikian, berdasarkan hasil penentuan distribusi *Mean Time to failure* pada komponen yang dilakukan tindakan perbaikan yaitu steam drum dimana dilakukan pergantian komponen setiap 99 hari, mud drum dilakukan pergantian komponen setiap 87 hari dan economizer dilakukan pergantian komponen setiap 134 hari.

Kata Kunci: *Reliability Centered Maintenance*, Perencanaan Perawatan Mesin

MAINTENANCE PLAN FOR STEAM BOILER MACHINE USING RELIABILITY-CENTERED MAINTENANCE METHOD AT PT SULTRA PRIMA LESTARI SULAWESI

ABSTRACT

Supporting work machines and equipment will make the production process run optimally. Damage to production machines causes production activities to stop, production quality decreases, and even threatens worker safety. PT Sultra Prima Lestari experienced 94 downtimes for boiler engines in 2019-2022. The absence of scheduled maintenance actions can result in very costly damage to facilities and machinery. From these problems, it is necessary to take action using the Reliability Centered Maintenance method, namely the main preventive maintenance action, namely preventing and minimizing the consequences of failures that arise, to increase the reliability and safety of the machine. Its failure can make all other machine parts/devices constrained. The Steam Drum fails to circulate water, the mud drum corrodes, and the economizer fails due to corrosion. In the FMEA results, where the most important critical component with the highest priority is the steam drum which has failed to circulate water, the mud drum is rusted, and the economizer is corrosive. In time-directed (TD), it is necessary to repair engine components with specific priority, time-directed (TD) maintenance actions on boiler engines. Thus, based on the results of determining the Mean Time distribution to failure on the components that are carried out corrective actions, the steam drum is replaced every 99 days, the mud drum is replaced every 87 days, and the economizer is replaced every 134 days.

Keywords: Reliability Centered Maintenance, Machine Maintenance Planning

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