MAINTENANCE STRATEGY BASED ON RELIABILITY
(CASE STUDY IN COOPERATIVA CAFÉ TIMOR, EAST TIMOR)

THESIS

Submitted as Partial Fulfill of the Requirements
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STATEMENTS OF WORK'S ORIGINALITY

I honestly declare that this thesis, which I wrote does not contain the works or parts of the works of other people, except those cited in the quotations and bibliography, as a scientific paper should.

Yogyakarta, June 24th 2011.

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On

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Dedicated to:

Pai, Mae

Gina, Ivo, Toni

With LOVE

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Writer

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ABSTRACT

The purpose of this research is to determine the plant reliability and propose a proper maintenance strategy that can be applied in dry processing factory of Cooperativa Café Timor (CCT), East Timor. The analysis done such as: plant reliability, failure rate, optimum interval preventive maintenance, and spare part inventory.

The analysis of plant reliability is done to know the reliability of the plant and type of plant reliability system. The plant reliability is 0.99915 with series system. The analysis of failure rate is done with purpose to find a proper maintenance strategy for the potential subsystems (machines), such as peeler polisher and elevator 1. The analysis shows that the failure rate curve of peeler polisher and elevator 1 are increasing, therefore a proper maintenance strategy that can be applied is preventive maintenance. The analysis of optimum interval preventive maintenance is done to know the optimum interval time in doing the preventive maintenance. The optimum interval for peeler polisher and elevator are 1,229 Hours and 634 Hours respectively. The analysis of spare part inventory is done in order to ensure that the spare part is available when needed. This analysis is done using the Classical Economic Order Quantity (EOQ) Model, where the result shows that the order quantity of peeler polisher and elevator 1 are 7 and 9 Units respectively and reorder point are the same, which is 1 Unit.

Based on the analysis and discussion, a proper maintenance strategy that can be applied on peeler polisher and elevator 1 is preventive maintenance, where the preventive maintenance for peeler polisher will be done by over-time, whereas for elevator 1 will be done during the break hours of the workers.