

PROFIT ANALYSIS OF HULLING SYSTEM IN RICE-MILL PLANT WITH CHANGE IN DEMAND AND PM AT DOWN STATE SUBJECT TO MAXIMUM OPERATION TIME

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Abstract

This Paper presents the Profit Analysis of a Rubber Roller in Hulling System used in Rice-Mill Plant with Change in demand of rice. As change in demand affects production of system also, sometime the system needs to shut down when supply is more than demands. In this paper we consider two type of upstate when demand is more than or equal to supply and Supply is more than demand. When there is less demand or supply is more than demand the operative unit put in down state. The down state in Rubber roll is shut down after a maximum operation time and undergo for Preventive Maintenances. There is a single server who visits the system immediately whenever needed to carry out preventive maintenance and repair. The unit works as good as new after preventive maintenance and repair. The failure and maximum operation times of the unit are distributed exponentially while the distributions of PM and repair times are taken as arbitrary. Using semi Markov process and regenerative point techniques expression for various reliability characteristics are obtained and expected profit is calculated. The tabular representation of MTSF, availability and profit with respect to maximum rate of operation time has also been shown for a particular case.

Key Words : *Maximum operation time (MOT), Preventive maintenance (PM), Change in demand, Profit analysis, Regenerative point techniques.*

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