## Availability Analysis of Milling System in a Rice Milling Plant

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**Abstract :** The paper describes the availability analysis of milling system of a rice milling plant using probabilistic approach. The subsystems under study are special purpose machines. The availability analysis of the system is carried out to determine the effect of failure and repair rates of each subsystem on overall performance (i.e. steady state availability) of system concerned. Further, on the basis of effect of repair rates on the system availability, maintenance repair priorities have been suggested. The problem is formulated using Markov Birth-Death process taking exponential distribution for probable failures and repair rates. The first order differential equations associated with transition diagram are developed by using mnemonic rule. These equations are solved using normalizing conditions and recursive method to drive out the steady state availability expression of the system. The findings of the paper are presented and discussed with the plant personnel to adopt a suitable maintenance policy to increase the productivity of the rice milling plant.

Keywords : availability modeling, Markov process, milling system, rice milling plant

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