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Abstract

To improve the reliability of the industrial systems, the main requirement is to identify the most expected failures and to minimize the effects of such failures. This can be achieved through availability evaluation of the systems of the industry. Here, the performance analysis of molasses (by-product of sugarcane) making system is carried out. The system consists of four subsystems, namely: Crystallizer, C-fore worker, C-after Worker and Melter. Functioning of these subsystems is in series and within subsystems have different working configurations. Equations associated with the system model are developed and solved to get the state probabilities by using supplementary variable technique. A particular case is also considered to show the availability and expected behavior of the molasses making system. Numerical results are obtained to explain the effect of subsystems working behavior.

Keywords: [Availability](#) ▪ [expected profit](#) ▪ [molasses](#) ▪ [by-product of sugarcane](#) ▪ [supplementary variable technique](#)

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