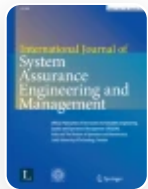


Availability based operational behavior of *B-Pan* crystallization system in the sugar industry

Original Article Published: 12 April 2017

Volume 8, pages 1450–1460, (2017) [Cite this article](#)



International Journal of System
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Abstract

In this paper, the *B-Pan* crystallization system in the sugar industry is analyzed that having three subsystems—crystallizer, centrifugal machine and melter. These subsystems are arranged in series. Subsystem ‘centrifugal machine’ has standby unit, subsystem ‘crystallizer’ has four parallel units and subsystem ‘melter’ has single unit. The time to failure of the subsystems follows negative exponential distribution while repair time distribution is taken as arbitrary. The differential–difference equations of the system model are developed by using supplementary variable technique and solved to get state transition probabilities of *B-Pan* crystallization system. A particular case is also