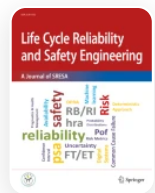


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Reliability modelling and study of failure mechanism of distillery plant using supplementary variable technique

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Abstract

In this paper, an attempt has made to study the failure mechanism of distillery plant through reliability modelling. This plant consists of three processing parts, namely Liquefaction, Fermentation and Distillation. These parts connected in series configuration and each part consists of different subsystems according to their working. The distribution of failure times of subsystems of distillery plant is taken as exponential, while the distribution of repair times of subsystems is considered as arbitrary. The differential-difference equations associated with the state changeover model of the distillery plant are derived using supplementary variable technique and these equations are solved to get state probabilities of the system model. The results for some measures of