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Stochastic Analysis of A Non-Identical Two-Unit Parallel System with Common-Cause Failure Using GERT Technique

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Abstract

This paper presents a stochastic analysis of a non-identical two-unit parallel system with common-cause failure by Graphical evaluation and review technique (GERT). The failure and repair rates are constants for the units. Steady-state availability, mean-time to system failure (MTSF), and busy and idle times of the service facility are obtained. Some numerical results of steady-state availability and mean-time to system failure are calculated and plotted.

Keywords: Busy-Time, Common-Cause Failure (CCF), GERT, Idle-Time, MTSF, MTTR, W-Function.