

ABSTRACT

PT XYZ is a company that produces concrete cement for sustainable development in Indonesia. Based on data obtained from the batching plant system from 2017 to 2019 a system breakdown structure was obtained from the system such as wheel loader, compressor, generator set, and plant. Of the four subsystems, critical subsystems will be sorted based on downtime and repair time on each subsystem. Because the batching plant system is arranged into a serial system that will result if there are subsystems that experience system failure then other systems will be stopped. Therefore we need an analysis of Reliability, Availability, Maintainability, and Dependability of the system to get an analysis of the performance of each subsystem and determine critical subsystems that are detrimental to the company.

From the results of RAMD processing (Reliability, Availability, Maintainability, and Dependability) using Reliability Block Diagram modeling based on the analytical approach, when $t = 8$ hours the system has a Reliability value (59%). The average value of system Maintainability at $t = 24$ hours is (97.19%). The availability Markov process value is (80.27%), inherent availability (80.68%), and operational availability (88.05%). Based on the world-class maintenance of Key Performance Indicators, leading indicators and lagging availability have not yet reached the target indicator standard. The smallest dependability value is found in the plant subsystem (5.07) and is a critical subsystem that needs further investigation.

Keywords: Reliability, Availability, Maintainability, Dependability, Reliability Block Diagram, Markov Process, Key Performance Indicator