ABSTRACT

PT XYZ operate the machine Cincinati Double Gantry F since 1987. However, during the operating there are problems such as failure of the process that affect the performance of the machine so that the impact on the losses of the company, namely a decrease in revenue. Based on the damage data for the month of January 2016 – December 2018, the subsystem Axis and Electrical Panel & Control is a critical subsystem of the results of the risk matrix with the frequency of the highest damage, namely a total of 33 and 21. Therefore, the necessary steps to reduce losses that occur with conducting research to analyzing the value of Reliability, Availability, Maintainability and Safety Analysis (RAMS). The results of the RAM by using the modeling of RBD based on the subsystem selected results obtained value of the reliability a subsystem of the Axis is lower than the Electrical Panel & Control. The time required to restore the subsystem Axis to normal range 1 hour (98%) and subsystems of Electrical Panel & Control ranged from 1 h (96%). Based on the evaluation standard IVARA World Class Maintenance Key Performance Indicators with leading indicators and lagging has reached the target of 95%. The results of research on the safety analysis at the time of the time interval of 16 hours a subsystem of the Axis is lower than on Electrical Panel & Control on the level of Safety Integrity Level However at the time of the time interval 80 hours, a subsystem of the Axis does not reach the target SIL according to standard IEC 61508.

Keywords: *Cincinati Double Gantry F , Reliability Availability Maintainability, Safety Analysis, Maintenance Key Performance Indicator, SIL, IEC 61508*