

ABSTRACT

PT. Semen Padang is one of the cement companies in Indonesia established in 1910 The company is located in Padang, West Sumatra. The company is engaged in the cement industry. In 2019 and 2020 PT. Semen Padang experienced a decrease in production so that the production target was not reached in 2019 and 2020. The failure to reach the production target that has been set due to damage to the Grate Cooler engine is caused by faulty engine components. Based on the data processing and Assessment risk matrix, there are 2 engine components that suffered damage that caused a downtime machine caused by engine repair. At this time PT. Semen Padang has a problem in the process of supplying spare parts where the company only performs the calculation of spare parts needs-based only on the assumption that the number of critical components only stocked as many as twice the installed components for the amount of inventory. For Hydraulic Actuator components, 12 units Bearing Running Axle 12 Units. Therefore, reliability-centered spare and min-max stock analyses are required to obtain spare parts inventory policy and improve the performance of each critical subsystem. Reliability Centered Spare (RCS) and Min-Max Stock method is used to calculate the needs of spare parts for 1 year which aims to get the company's needs for more optimal parts. While the Min method. The results of this study using the RCS method obtained critical parts needed for 1 year as follows: Hydraulic Actuator: 7 units and Bearing Running Axle: 5 units. While based on the calculation of Min-Max Stock obtained critical parts needs for 1 year as follows: Hydraulic Actuator Minimum Stock: 5 Units, Maximum Stock: 8 units, Reorder Point: 5 units and components Bearing Running Axle Minimum Stock: 3 Units, Maximum Stock: 4 units, Reorder Point: 3.

Keywords: *Reliability Centered Spare, Min Max Stock, System Breakdown Structure, Downtime Machine*