ABSTRACT

PT Dok & Perkapalan Kodja Bahari *engaged in the production of various types of ship orders to meet demand because it is supported by the company's components, one of which is the SAF-FRO RS machine (CNC CUTTING). At SAF-FRO RS machine (CNC CUTTING) there are a lot of components that set up a machine and has 14 subsystems that make up the machine. SAF-FRO RS machine (CNC CUTTING) function to cut the ship raw materials, namely steel plates with different sized plates into pieces according to the model that was created earlier. Due to the SAF-FRO RS machine (CNC CUTTING) is a key staple of the production process and are required to always be in good condition then it should be calculated using the number of optimization components need reliability approach to decision making.*

Based on TTF, in 2011-2013, it can be done plotting the distribution and the distribution that represents determination. Further data processing system breakdown structure to obtain the components of the most critical. Critical components of the calculation of risk to which there are priority number value of severity, occurance and detection subsystem level. RPN calculation results obtained from the most critical subsystem is the subsystem CPM 360 and motorization.

The test results on the critical components of different distributed components, namely the exponential distribution and weilbull. Based on a critical component that has been determined by the method of FMEA is associated with the rate of damage to the function of the number of method reliability requirements of critical components for a period of one year for each critical component is as much as 749 units Nozzle, Electrode 749 units, Dip tube as 1 unit, as many as 124 units Diffuser, Seal 1 unit, 2 units Shield Cup, Retaining Cup 2 units, 1 unit Bearing, Motor and Gearbox 3 units 1 unit.

After getting the required amount of components for 1 year, then the next calculated the optimal order quantity and reorder point in order to minimize the total cost of inventory. For each of the critical components of the result Nozzle with Q * = 74 and r = 5, Electrode with Q * = 87 and r = 5, Dip tube with Q * = 1 and r = 1, Diffuser with Q * = 50 and r = 1, Seal with Q * = 5 and r = 1, Shield Cup with Q * = 3 and r = 1, Retaining Cup with Q * = 2 and r = 1, Bearing with Q * = 1 and r = 1, Motor with Q * = 1 and r = 1 and Gearbox with Q * = 1 and r = 1.

Keywords: *Maintenance Management, Spare Parts, Reliability, EOQ, reorder point, repairable, non-repairable*