ABSTRACT

PO Rajawali Project is a company engaged in rental of heavy equipment. Heavy equipment for rent are excavators, dump trucks, cranes, bulldozers, forclift and tandem rollers. The most frequently hired is the excavator. Kobelco SK200 is the most widely excavator for rent because of the type is the newest excavators so it has always be the choice of the tenant. Because the number of operating hours is greater than the other, so the excavator frequency of breakage Kobelco SK200 is also higher than other excavators. The high frequency of damage to the high risks and costs are borne by companies because of theunreliability of the machine. Need for optimal care activities to lower the risk and cost of unreliability.

An excavator has six subsystems, namely the boom, arm, bucket, cabin, under carriage and the upper structure. Then, six subsystems are selected to define the most critical subsystems by using risk ratrix. Based on risk matrix, selected three critical subsystems namely bucket, arm and upperstructure. The third subsystem is selected to be the object of research to determine the proposed interval of treatment by using the method of Risk Based Maintenance (RBM) and calculate the costs borne by companies because of the unreliability excavator using the method of Cost of Unreliability (COUR).

From the results of the data processing is carried out, to the calculation by using the method of RBM obtained value risks amounting to Rp 16.532.685 with a 3.73% and the percentage of risk acceptance criteria have been determined by company is 2%. Percentage calculation result exceeds the limits of risk acceptance criteria, so that need to create proposed of interval maintenance. With the proposed maintenance intervals, was able to lower the risk of becoming 1.98% and below the acceptance criteria. For calculations, the costs resulting from the COUR unreliability is Rp52.685.6119 from corrective COUR and Rp115.453.015 from downtime COUR.

Keywords: Risk Matrix, Risk Based Maintenance, Cost of Unreliability