ABSTRACT

A production system will be able to walk better if supported by various aspect, one of them is maintenance task on work facilities on those system. Related to them, the problems which is studied in this research are related to the system maintenance development in PT Tjakrindo Mas, specially in a division of PVC pipe. This research are focused on Extruder and Cutting machine which are exist in line production 4 with their product is PVC pipe type C5/8".

The methodology which is used are Reliability Centered Maintenance (RCM), with the aim is to get an optimal maintenance task if evaluated from minimation cost aspect. RCM’s method are include qualitative analysis with Failure Modes and Effect Analysis and Decision Diagram to determine an optimal maintenance task, and the second one is quantitative analysis to determine an optimal maintenance task interval. In general, data which are needed in this analysis consist of the data of component break down and maintenance activity which is happened on Extruder and Cutting machine, and recorded on Machine History Record and Maintenance Activity Report. Beside that, data is also obtained from interview with maintenance management.

The result of qualitative analysis is indicate that from 10 component compiling Extruder and Cutting machine, there are 8 component that conducive to be done by type of maintenance task of Scheduled On-condition Task, while the rest component are used Scheduled Discard Task and the default action Scheduled Failure Finding Task. And from quantitative analysis indicate that an optimal maintenance task interval can be reduced the maintenance cost for each 10 component, although with the same availability with the previous maintenance task interval. The biggest decreasing cost was Rp. 8770/hour happened on Screw component, with an optimal interval is every 841.5 operational hour, which the previous maintenance interval is every 42 operational hour. At the second sequence, was happened at Clamping device component on Cutting machine, and followed by Temperature unit control component of Extruder machine.

Keywords: Reliability Centered Maintenance (RCM), Failure Modes and Effect Analysis (FMEA), RCM Decision Diagram, quantitative analysis, Functional Block Diagram.