ANALYSIS OF MAINTENANCE PROGRAM TO REDUCE DOWNTIME WITH RELIABILITY CENTERED MAINTENANCE II (Case Study at PT. X)

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ABSTRACT

PT. X is a food and beverage company with the end product are isotonic drinks. The problems that PT. X faced is the occurrence of machine failure before the scheduled maintenance. Consequences that must be faced is the downtime which cause the production process to stopped and increase the cost for repairing that result in losses for the company. Object of this research is Blow Molding machine which is a machine that produces plastic bottles. This machine is chosen because it has the highest downtime than other machines.

In analyzing the maintenance program, the initial thing to do is to measure the performance of the machine. In measuring the performance of the machine, we can use Overall Equipment Effectiveness (OEE) methods, where the result of OEE shows percentage of how well the machine works. Once known the OEE of the machine, the next steps is to construct maintenance program with Reliability Centered Maintenance II where we use Failure Mode and Effect Analysis to identified the failure cause and the failure effects, and RCM II Worksheet which covering information for maintenance program. Then calculating the maintenance interval and maintenance cost.

OEE calculation results show that the OEE value of Blow Molding machine is still under the optimum value with the highest OEE value shown on January 2015 with value 60.35%, and the lowest OEE value on March and May 2014 with value 32.31%. RCM II analysis shown that scheduled on condition task is the suitable action for the maintenance program. Results of the maintenance interval shown that preform and bottle transfer turntable components is having the most cost reduction for maintenance with 75.59%

Keyword: Reliability Centered Maintenance II (RCM II), Failure Mode and Effect Analysis (FMEA), Overall Equipment Effectiveness, downtime