ABSTRACT

There are so many new industrial segment come out over the time. That is good to support the innovation or new idea from the peoples and makes new industries in every segment. The metal works and engineering is one of the segment that needed by other industries to support with making the component for them. PT Barata Indonesia is a BUMN that works in metal works and engineering segment. One of the client that always order for PT Barata Indonesia’s product is cane industries. The routine order from cane industries are for cane crusher mills to exchange their broken cane crusher mills.

Cane crusher mills are arranged by shell and a shaft. But there are some troubles in the production process like a high frequencies of defect like a porous and crack. And if the porous defect is highly rated (up to 75%) the shell need to be smelted to raw material and started to make a new shell to replace the smelted one until its ready for assembly process with the shaft. To resolve the problem on the production process of cane crusher mill, the writer do a research with six sigma concept to find the causes and how to resolve the problem. The method that used are Root Cause Analysis to find the root cause of any problems than using the Failure Mode and Effect Analysis to generate some improvement alternative that can be used to solve the problem. After the alternatives are generated, than find the best alternative by using value engineering.

As the result of this research, there are founded three critical waste in the production process of cane crusher mill, that three waste are defect, waiting, and excess processing. The selected alternative is the alternative with the highest value (2.13), alternative one. Alternative one is rescheduling the preventive maintenance of the induction furnace machine to reduce the defect that can make reduction of the rework and waiting time that caused by doing rework for the defected shell.

Key Words : Failure Mode and Effect Analysis (FMEA), Lean Six Sigma, Root Cause Analysis (RCA), Value Engineering, Waste
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