

ABSTRACT

PT. XYZ is the industry that produces fertilizer as the main production. This research takes place in Ammonia 1A. The product yielded is ammonia. This industry produces the fertilizer by using the machine which operates for 24 hours and it is always supervised by operator of each shift. The entirely production of fertilizer uses the machine. If there is disruption to the machine during production, it will affect the finished production process. The 1110 JC machine is a pumping machine that can drain the service from the stripper to the absorber in the CO2 remover area and go to separator. This machine can be called a machine which has the high downtime in 2016.

To prevent the decrease in the production capacity due to engine damage, it is necessary to have a management maintenance process which is by using the method of Overall Equipment Effectiveness (OEE). In the Overall Equipment Effectiveness (OEE) method, the research on six big loses factor to find out what factors can cause OEE value low is conducted. This method is used to know the availability, performance rate, and rate of quality product. Besides, conducting an analysis of the cost approach is also required. With life cycle cost (LCC) method calculation, the result of life cycle cost (LCC) is used to know retirement age, maintenance crew, and total life cycle cost (LCC). To get the life cycle cost (LCC) total, it is obtained from the cost processing, namely sustaining cost and acquisition cost.

Based on the OEE method, OEE value of 79,05% is obtained. The value of OEE obtained has not reached the standard criteria set by company of 89%. Based on the six big loses, it is found that the most influential factors to decrease the effectiveness of 1110 JC engine are idling and minor stoppages factor with 48% from total losses. Meanwhile, based on the LCC method, the minimum total of LCC value is Rp. 1.945.162.303,00 with 6 years optimal machine life (retirement age) and the optimum amount of maintenance crew is one person in one shift.

Keywords – Life Cycle Cost, Overall Equipment Effectiveness, Six Big Losses