ABSTRACT

PT Universal Robina Corporation (URC) Indonesia is a manufacturing company that produces food. One of the products produced is The Natural Crackers Co. (TNCC). In the January – December 2021 period, the Wolf 2 machine experienced the highest downtime frequency among other packaging machines. This causes the performance and productivity of the machine to be not optimal so that it has an impact on the production process. To overcome these problems, it is necessary to evaluate the effectiveness of the Wolf 2 engine. Therefore, this final project aims to design a maintenance system for the Wolf 2 engine using two methods in order to evaluate the effectiveness of the Wolf 2 engine, namely the Overall Equipment Effectiveness (OEE) method. and Overall Resource Effectiveness (ORE) with the aim of evaluating the effectiveness of the machine by taking into account the resources used (materials, people, and methods). Based on the results of the OEE and ORE calculations, the OEE and ORE values on the Wolf 2 machine in January – December 2021 are 43.46% and 42.20%, which means that the OEE and ORE values have not reached the standard of the Japan Institute of Plant Maintenance (JIPM) of 85%. The low value of OEE and ORE is due to the low value of performance efficiency as well. Based on the calculation of the six big losses with the aim of knowing the losses that exist in the production process, there are two dominant losses factors that have the most influence on the effectiveness of the Wolf 2 engine, namely the high value of reduce speed loss with a value of 55% and defect loss with a value of 3.98%. The OEE and ORE values that do not meet the JIPM standard can be used as an evaluation in order to increase the effectiveness of the Wolf 2 engine with an integrated maintenance system design. This integrated maintenance system consists of human, machine, and method aspects. The design of this maintenance system is based on autonomous maintenance, which means that the operator is given the responsibility and trust in maintaining the condition of the machine so as to minimize damage to the Wolf 2 engine at PT Universal Robina Corporation (URC) Indonesia Plant 2.

Keywords: Overall Equipment Effectiveness (OEE), Overall Resource Effectiveness (ORE), six big losses, Auutonomous Maintenance