

## ABSTRACT

*PT SIMNU is one of company that uses back-to-order production system (production activities still take precedence in order to fulfill existing orders). It's important to keep the engine in order to fulfill the order right at the appointed time so that consumer confidence is maintained. One machine that has an important role in the PT SIMNU is boiler 1. In this case, the machine serves to supplying heat to the engine and when experienced downtime caused will cause all of the activities of production stops.*

*Record data shows that the boiler 1 have some downtime records that exceed the tolerance limits that have set by the company. From the calculation of risk with the approach "system performance", it was found that the risk borne by the company when the boiler 1 having downtime is Rp 113.977.269, exceeding the revenue limit calculation of risk that should be Rp 19.650.000. For that, is necessary to plan maintenance intervals for overhaul boiler 1 and to do the analysis of time scheduling, to determine the form of the resulting trajectory and the probability of successful treatment activities can be done.*

*By using the Risk Based Maintenance (RBM) approach that conducted in this study, found that the proposed overhaul maintenance interval for the month of August 2012 (when the holiday Eid al-Fitr) for the boiler 1 is 64.159 hours, with an acceptable risk is Rp 11.868.913, reliability is 86.06% and opportunities that overhaul activities can be completed in 64.159 hours is 84.13%.*

***Keywords: Boilers, Risk Based Maintenance, Standard Operating Process, Critical Path Network, Program Evaluation and Review Technique***