## ABSTRACT

PT Kereta Api Indonesia (PT KAI) is a Government-owned corporation that provide train as mass public transportation. PT KAI DIPO Locomotive Operational Area II Bandung (PT KAI DL DAOP II BD) is a plant that operates in Bandung. Locomotive is one of the facilities that is owned by a train. PT KAI implementing preventive and corrective maintenance, with maintenance period for a month, 3 months, 6 months, 12 months, semi-overhaul for every 1 year and overhaul for every 2 years. They also did daily check and monthly check to assess the machine condition. The locomotive system is divided into several system, such as electrical control system, diesel engine, pneumatic system, mechanical system and so on. The number of breakdown for locomotives types CC201 from 2010 until 2014 are high, especially the diesel engine. If serious failures occurs on locomotive, then it caused the whole train to stop working altogeter. Therefore, improvement on maintenance task for locomotive in PT KAI DL DAOP II BD is needed, as well as determining the optimal maintenance interval while considering maintenance cost, and risk of failure.

The method used in this research is a Reliability Centered Maintenance to find the optimal maintenance strategy and maintenance tasks. This research also using RCM++ software to calculate the optimal maintenance interval for component in Diesel Engine.

First step in research is to conduct a quantitative calculation to determine the mean time to repair (MTTR) and mean time to failure (MTTF) for component in Diesel Engine. Next is conduct qualitative data processing using RCM II. The results are improved maintenance strategy and maintenance task for engine components. There are four choosen strategy, they are Schedule On-Condition, Schedule Restoration, Schedule Discard and Failure Finding. After learning care policies for each component, then determined the maintenance intervals and maintenance costs for each component using RCM and RCM++ software.



Keyword : Reliability Centered maintenance II, RCM II, locomotive, Reliasoft