

## **ABSTRACT**

*PT Pertamina Refinery Unit VI Balongan through Crude Distillation Unit which is an Atmospheric Distillation Tower designed to process crude oil in Indonesia and produce Fuel Gas product, LPG, Naphta, Kerosene, LGO, HGO, and Residue. CDU operates for 24 hours every day and able to process crude for 125,000 BPSD. CDU is a primary processing which its products will be processed further to ARHDM unit and RCC unit. Since CDU is a primary processing, so proper maintenance strategy is needed. Existing maintenance strategy is not effective and efficient based on a high frequency of damage due to maintenance activities do not conform to the characteristics of the components and Turn Around that requires substantial maintenance costs.*

*By using Reliability Centered Maintenance to design optimal treatment activities that has purposed at generating effective and efficient activities maintenance. Effectiveness of maintenance activities is based on conformity with the characteristics of damage while efficiency is based on the total cost of treatment incurred . Calculation of spare parts is done to support preventive maintenance activities effectively and efficiently to ensure the availability of spare parts in accordance with its life span or before the component fails . Spare parts are divided into two types according the action to be taken to its components, which is repairable spare parts and non-repairable spare parts.*

*Based on the results of data processing, 2 critical subsystems selected on CDU, which are Stabilizer Systems and Cooling Systems. These critical subsystems which became the object of research . Treatment for this type of activity is obtained Scheduled Task On Condition as many as 14 maintenance tasks, Restoration Scheduled Task as many as 8 maintenance tasks, and Scheduled Task Discard as many as 5 maintenance tasks with maintenance time intervals from 5000 hours to 30.670 hours. After getting maintenance time interval, it can determine the total cost of maintenance that will be issued per year, which is Rp 504.207.750,00. The number of components for repairable spare parts as many as 7 spare parts and non-repairable spare parts as many as 10 components, with spare parts needed as many as 1 to 19 pieces.*

*Key words: Reliability Centered Maintenance, Spare Parts, Preventive Maintenance*