**LIFE CYCLE COST ANALYSIS – INTEGRATED WITH CMMS (COMPUTERIZED MAINTENANCE MANAGEMENT SYSTEM) CASE STUDY IN PT. BADAK NATURAL GAS LIQUEFACTION**

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**ABSTRACT**

Maintenance of production equipment is an important process for keeping continuity of production. In the maintenance of production equipment required a reliable maintenance information system. In this case, CMMS is an effective maintenance control based on the maintenance record that already exist. Life Cycle Cost Analysis (LCCA) is a method of assessing the total cost of facilities owned. By using LCCA, decision support tools can assess the economical point of equipment replacement or maintenance policy.

In this research, CMMS will be integrated with Life Cycle Cost Analysis (LCCA). Overall cost required to acquisitate until to dispose will be calculated in this method. Equipment Criticality Rating is also considered in decision making. Meanwhile, total downtime and frequencies are being the parameter to sort ten worst machines which will be analyzed by LCCA. Life Cycle Cost value is in present value. Repair or replace decision was decided through the method of Fuzzy Logic. Results from manual calculation and decision-making processes are being used to validate the results of calculation and decision making process CMMS in this study.
By integrating Life Cycle Cost Analysis in the CMMS, obtained equipment maintenance policy determination by the decision which consists of repair or replace. From manual calculations and software calculations obtained ten worst machines based on its frequency and downtime along with an appropriate maintenance policy.

**Keywords**: CMMS, Life Cycle Cost Analysis, fuzzy logic, maintenance record, downtime, frequency of failure.