ABSTRACT

OPTIMIZATION OF PREVENTIVE MAINTENANCE FOR CRYTICAL SUBSYSTEM IN CONVEYOR 2873-V BY RELIABILITY-CENTERED MAINTENANCE METHOD AND RISK-BASED MAINTENANCE (CASE STUDY : PT PUPUK KALTIM)

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PT Pupuk Kaltim as a biggest manufacturer of Urea and Ammonia in Indonesia with a production capacity of 2.98 million tonnes of urea per year and 1.85 million tons of ammonia per year, as well as NPK fertilizer production of 500 thousand tons per year. PT. Pupuk Kaltim has a big role than some other manufacturers, it can be proved by marketing coverage to meet the needs of national and international fertilizer. Because one of the main factors supporting the sustainability of process in the PT. Pupuk Kaltim is smooth of line production process, special attention is given to transport the production line which form a continuous material transfer planes (Conveying Equipment), especially the Conveyor 2873-V.

Based on Pareto diagram from the 20 Conveyor 2873-V subsystems choosed critical subsystems, it is Idler Roller, Return Roller, Bend Pulley, Belt Conveyor, and Tail Pulley. Critical subsystems was then used as the object of research. Firstly reviewed in advance by calculating availability and risk using Risk-Based Maintenance, and then the conclution say that we need to repair existing preventive maintenance activities and determining maintenance intervals according to the characteristics of the damage, we then use a method Reliability-Centered Maintenance to make optimum maintenance activities which is the maintenance activities effectively and efficiently. Effective refers to the characteristics of damage and the efficient refers to the total cost of maintenance that must be removed.

Based on the results of data processing carried out on critical subsystems and components Conveyor 2873-V, obtained 17 scheduled restoration task components, 12 components with scheduled discard task, 12 components with a scheduled task on condition, 5 components with failure-finding task and 2 components task run to failure. While treatment time intervals obtained for each components, tailored to the task obtained.After get the maintenance interval we can determine the total cost of maintenance, it's about Rp 1,221,760,245.

Key Words: Reliability-Centered Maintenance, Risk-Based Maintenance, preventive maintenance