Abstrak

Dalam memenuhi kebutuhan permintaan pasar, produksi haruslah efektif dan efisien dengan adanya perancangan tata letak fasilitas yang optimal, meliputi luas lantai produksi, gudang, peralatan dan fasilitas untuk menunjang produksi yang efektif dan efisiensi serta pengurangan biaya dan adanya ruang untuk pemindahan bahan. Dalam merancang tata letak, digunakan integrasi metode konvensional dan algoritma CORELAP untuk menentukan tata letak posisi stasiun kerja untuk area produksi dan fasilitas yang optimal. Dalam mengindentifikasi proses, langkah pengolahan seperti mengindentifikasi *operation process chart* untuk menentukan *routing sheet* berdasarkan data mesin dan informasi data mesin, Penentuan luas lantai produksi, penentuan *activity relationship chart* area produksi dan fasilitas lainnya, pengolahan dengan metode algoritma CORELAP dan *activity relationship diagra*m untuk dirancang ke dalam bentuk *area allocation diagram* serta diperhitungkan ke dalam bentuk *material handling planning sheet* dalam menentukan keefektifan dan efisiensi pemindahan bahan. Rancangan model tata letak yang telah diperhitungkan mendapatkan hasil penghematan biaya sebesar 78,67%

Kata Kunci: *Algortima CORELAP, Activity Relationship Diagram, Operation Process Chart*, Perancangan Tata letak Fasilitas, *Material Handling Planning Sheet*

Abstract

In meeting the needs of market demand, production must be effective and efficient with the design of an optimal facility layout, including the production floor area, warehouse, equipment and facilities to support effective and efficient production as well as reduce costs and have space for moving materials. In designing the layout, the integration of conventional methods and the CORELAP algorithm is used to determine the layout of the workstation position for the optimal production area and facilities. In identifying processes, processing steps such as identifying operation process charts to determine routing sheets based on machine data and machine data information, determining production floor area, determining activity relationship charts for production areas and other facilities, processing using the COROLAP algorithm method and activity relationship diagrams to be designed in the form of an allocation diagram and calculated into the form of material handling planning sheet in determining the effectiveness and efficiency of moving materials. The calculated layout model design resulted in cost savings of 78,67%

Keyword ***:*** *CORELAP Algorithm, Activity Relationship Diagram, Operation Process Chart, Facility Layout Design, Material Handling Planning Sheet*