ABSTRACT

Production floor layout is an important point in developing productivity, because all of production system will be breakdown from this layout. By a good machine layout design, material handling will be decreased and work productivity will be increased. Material handling is a process which happened in every production system and useless. PT. ALSTOM POWER esi is producing boiler using job order production system, so that the product's type is very specific. At present days, layout in PT. ALSTOM POWER esi is not efficient because it only made by intuition and has a large material handling.

Systematic Layout Planning is a philosophy from layout design, having simple and clear procedures in designing layout. Orienting in 5 core element in layout design, like product (P), quantity (Q), process (R), supporting system (S) and time (T), production floor will fit the factory needs. Not only using SLP, Planar Graph Methods but also CORELAP Algorithm are being used to design layout and Rank Order Clustering Algorithm to classify machines in machine cells.

Result from this research is layout from Group Technology which give the best layout formation with material handling's distance about 115.200 m, while Non Group Technology give material handling's distance about 214.866,67 m and Combination Methods give material handling's distance about 154.200 m. Material handling cost is not necessary to be analyzed because all of material handling system used the same devices, human operator, without conveyor. This layout is better than the existing layout because give the elimination of material handling from 216.667 m became 115.200 m or give the material handling elimination about 101.466,67 m.

Keywords: Systematic Layout Planning, Planar Graph Methods, CORELAP, Rank Order Clustering, Group Technology, Material Handling