

ABSTRAK

AURA SHUFI SYUHADA. Perencanaan Tata Letak Fasilitas dengan Mempertimbangkan Risiko Keselamatan Kerja di Galangan Kapal CV. Nelayan Mandiri Menggunakan Metode *Systematic Layout Planning* (SLP) dan *Hazard Identification and Risk Assessment* (HIRA). Dibimbing oleh DENY NUSYIRWAN dan ADYK MARGA RAHARJA

Penelitian ini bertujuan merancang tata letak fasilitas galangan kapal CV. Nelayan Mandiri yang lebih efisien dan aman dengan mengintegrasikan metode *Systematic Layout Planning* (SLP) dan *Hazard Identification and Risk Assessment* (HIRA). Tata letak eksisting dianalisis melalui pemetaan fasilitas dan alur kerja produksi kapal fiber, kemudian dilakukan penilaian risiko berdasarkan aktivitas kerja dan kedekatan 35 pasangan fasilitas, dengan hasil bahwa sekitar 23% pasangan berada pada kategori risiko *Extreme*. Berdasarkan metode SLP disusun tiga alternatif tata letak, yaitu layout 1 dengan 20 fasilitas dan 188 pasangan, layout 2 dengan 21 fasilitas dan 210 pasangan, serta layout 3 dengan 22 fasilitas dan 231 pasangan, yang menata ulang urutan proses utama agar lebih linear serta memisahkan zona berbahaya dari area hunian dan fasilitas umum. Penilaian HIRA menunjukkan bahwa pada layout 1 proporsi pasangan kategori *Extreme* turun menjadi sekitar 5%, pada layout 2 pasangan *Extreme* terkonsentrasi sekitar 20% dari kombinasi berisiko tinggi, sedangkan pada layout 3 sekitar 8% pasangan *Extreme* terfokus pada aliran proses kritis yang kemudian dikendalikan melalui rekayasa teknik dan prosedur kerja aman, sehingga layout 3 dipilih sebagai tata letak usulan terbaik karena paling mampu menggabungkan kelancaran aliran kerja produksi dan penurunan risiko keselamatan kerja melalui pendekatan perancangan tata letak yang berorientasi pada keselamatan

Kata kunci: *tata letak, galangan kapal, SLP, HIRA, keselamatan.*

ABSTRACT

AURA SHUFI SYUHADA. Facility Layout Planning Considering Occupational Safety Risk at CV. Nelayan Mandiri Shipyard Using Systematic Layout Planning (SLP) and Hazard Identification and Risk Assessment (HIRA) Methods. Supervised by DENY NUSYIRWAN and ADYK MARGA RAHARJA.

This study aims to design a more efficient and safer facility layout for the CV. Nelayan Mandiri shipyard by integrating the Systematic Layout Planning (SLP) and Hazard Identification and Risk Assessment (HIRA) methods. The existing layout was analyzed through facility mapping and the production flow of fiberglass vessels, followed by risk assessment based on work activities and the proximity of 35 facility pairs, which showed that approximately 23% of the pairs fall into the Extreme risk category. Based on SLP, three alternative layouts were developed: layout 1 with 20 facilities and 188 pairs, layout 2 with 21 facilities and 210 pairs, and layout 3 with 22 facilities and 231 pairs, rearranging the main process sequence into a more linear flow while separating hazardous zones from residential and public areas. The HIRA evaluation indicates that in layout 1 the proportion of Extreme-risk pairs decreases to about 5%, in layout 2 Extreme-risk pairs are concentrated at around 20% of high-risk combinations, while in layout 3 approximately 8% of Extreme-risk pairs are focused on critical process flows that are then controlled through engineering measures and safe work procedures. Therefore, layout 3 is selected as the best proposed layout because it most effectively combines smooth production flow with reduced occupational safety risk through a safety-oriented layout design approach.

Keywords: layout, shipyard, SLP, HIRA, safety.