

## ABSTRACT

*Risk Analysis is a combination a activity which involved risk assessment, risk management, and risk communication. The purpose of this research is to do Risk analysis on welders in tank (enclosed space) division warship the department of machinery outfitting and hull outfitting a welding workshop 2 in PT. PAL Surabaya.*

*This research is an observational research which is a cross sectional research based on the time of the research. The object of this research was concerned on welders in tank (enclosed space) division warship the department of machinery outfitting and hull outfitting a welding workshop 2 in PT. PAL Surabaya, with 20 persons. Primary data obtained through observation and interview that were presented in the table form, diagram, and analyzed descriptively.*

*The result of this research showed that in welders in tank (enclosed space). There were 26 kind of hazard and 31 accident risk, with details 4 low risk category or acceptable, 10 medium risk category or tolerated, and 17 high risk category or unacceptable. Examples include high risk category is electrical shock, cataract, and burns part of the body. The effort of control that applied was technically engineering control, administrative, and supply of Personal Protective Equipment (PPE). The most effective control is the use of personal protective equipment face shield on welders in every stage was welding, with 90% of the control value. Based on assessment residual risk, there were 74% low risk category (acceptable) and 26% 10 medium risk category (tolerated). During risk analysis process were occurred communication which aims to equalize perception.*

*The conclusion of this research is, there 26 kinds of hazard and 31 accident risk. The assessment results of the risk the rest of shows that 100% of the relative risk down after the control. Risk communication should be conducted in every stage an risk analysis by means of interviews and dissemination of information among 20 welders.*

*Keyword: Risk analysis, risk assessment, risk management, risk, communication, welder, weldment*

## ABSTRAK

Analisis risiko adalah suatu kegiatan meliputi *risk assessment*, *risk management*, dan *risk communication*. Tujuan penelitian ini adalah menganalisis risiko pada pekerja *welding* dalam tangki (ruang tertutup) divisi kapal perang departemen *machinery outfitting* dan *hull outfitting* bengkel las 2 di PT. PAL Surabaya.

Penelitian ini merupakan penelitian observasional dan *cross sectional* berdasarkan waktu penelitiannya. Objek penelitian ini berfokus pada pekerja *welding* dalam tangki (ruang tertutup) divisi kapal perang departemen *machinery outfitting* dan *hull outfitting* bengkel las 2 di PT. PAL Surabaya, dengan total populasi 20 orang. Data primer didapatkan melalui hasil observasi dan wawancara yang kemudian disajikan dalam bentuk tabel, diagram, dan dianalisis secara deskriptif.

Hasil penelitian menunjukkan bahwa pada pekerja *welding* dalam tangki (ruang tertutup) terdapat 26 jenis bahaya dan 31 risiko kecelakaan, dengan rincian 4 risiko kategori rendah atau dapat diterima, 10 risiko kategori sedang atau dapat ditolerir, dan 17 risiko kategori tinggi atau tidak dapat diterima. Contoh yang termasuk risiko kategori tinggi adalah tersengat listrik, katarak, dan luka bakar bagian tubuh. Upaya pengendalian yang diterapkan adalah pengendalian secara teknik *engineering*, administratif, dan penyediaan Alat Pelindung Diri (APD). Bentuk pengendalian yang paling efektif adalah pemakaian APD *face shield* pada pekerja *welding* di setiap tahapan pengelasan, dengan nilai pengendalian sebesar 90%. Berdasarkan penilaian risiko sisa, terdapat 74% risiko kategori rendah (dapat diterima) dan 26% risiko kategori sedang (dapat ditolerir). Selama proses analisis risiko, terjadi proses pertukaran informasi, dengan tujuan menyamakan persepsi.

Kesimpulan dari penelitian ini adalah terdapat 26 jenis bahaya dan 31 risiko kecelakaan. Hasil penilaian risiko sisa menunjukkan bahwa 100% nilai risiko relatif turun setelah adanya pengendalian. Komunikasi risiko dilakukan pada setiap tahap analisis risiko dengan cara wawancara dan penyampaian informasi kepada 20 pekerja *welding* dalam tangki (ruang tertutup) divisi kapal perang departemen *machinery outfitting* dan *hull outfitting* bengkel las 2 di PT. PAL Surabaya.

Kata kunci: Analisis risiko, penilaian risiko, manajemen risiko, komunikasi risiko, pekerja *welding*, las