

JOB SAFETY ANALYSIS (JSA) AND HAZARD IDENTIFICATION RISK ASSESSMENT AND RISK CONTROL (HIRARC) IN INDUSTRY PT INKA (PERSERO) MADIUN

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ABSTRACT

Background: The fabrication unit for plate processing is one of the work areas at PT INKA (Persero) Madiun that involves interactions between humans, machinery, heavy equipment, and materials, all of which present potential hazards that may impact occupational safety and health (OSH). Therefore, a systematic effort is required to identify potential hazards, assess risks, and establish appropriate control measures. One approach used to address these issues is the implementation of Job Safety Analysis (JSA) and Hazard Identification, Risk Assessment, and Risk Control (HIRARC). The application of these two methods aims to foster a safer and more productive work culture.

Objective: An update was obtained for the Hazard Identification, Risk Assessment, and Risk Control (HIRARC) document, including the list of hazard identifications, risk assessments, and the methods for determining control measures based on existing practices within the industry at PT INKA (Persero) Madiun.

Methods: This study employs a qualitative descriptive approach using observation methods applied to the fabrication production process at PT INKA (Persero) Madiun. The research was conducted in March 2025 at PT INKA (Persero) Madiun. The collected data were subsequently processed using the Job Safety Analysis (JSA) and Hazard Identification, Risk Assessment, and Risk Control (HIRARC) methods, enabling the analysis and identification of the highest risks and the corresponding control measures within the industrial environment of PT INKA (Persero) Madiun.

Results: The findings of the study revealed that out of 31 fabrication production processes, a total of 106 potential hazards were identified, consisting of 51 high and unacceptable hazards, 53 medium and tolerable hazards, and 2 low and generally acceptable hazards. There are five risk priorities, namely: fire with a risk assessment score of 15, hand struck by a machine with a risk assessment score of 16, finger pressed by a machine with a risk assessment score of 16, hand electrocuted with a risk assessment score of 15, and noise with a risk assessment score of 12.

Conclusion: Based on the JSA and HIRARC identification in the fabrication area, and after the implementation of additional control measures, no high-level hazards were found, while 49 were categorized as medium-level hazards and 57 as low-level hazards.

Keywords: Hazard, Risk, Occupational Safety and Health (OHS), JSA, HIRARC

JOB SAFETY ANALYSIS (JSA) SERTA HAZARD IDENTIFICATION RISK ASSESSMENT AND RISK CONTROL (HIRARC) PADA INDUSTRI PT INKA (PERSERO) MADIUN

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INTISARI

Latar Belakang : Unit produksi bagian fabrikasi pengerjaan plat merupakan salah satu tempat kerja yang ada di PT INKA (Persero) Madiun yang memiliki aktivitas antara manusia dengan mesin, alat berat, dan material yang dapat menimbulkan kemungkinan terjadinya bahaya yang bisa berdampak pada keselamatan dan kesehatan kerja (K3). Oleh karena itu, diperlukan upaya sistematis untuk mengidentifikasi potensi bahaya, menilai risiko, serta menetapkan langkah-langkah pengendalian yang tepat. Salah satu pendekatan yang digunakan adalah melalui penerapan *Job Safety Analysis* (JSA) dan *Hazard Identification Risk Assessment and Risk Control* (HIRARC). Penerapan kedua metode ini bertujuan untuk menciptakan budaya kerja yang lebih aman dan produktif.

Tujuan : Diperoleh *update* terhadap dokumen *Hazard Identification Risk Assessment and Risk Control* (HIRARC) daftar identifikasi bahaya, penilaian risiko, serta cara penentuan langkah-langkah pengendalian berdasarkan yang sudah ada di industri PT INKA (Persero) Madiun.

Metode : Jenis penelitian ini adalah deskriptif kualitatif dengan menggunakan metode pengamatan dan observasi pada proses produksi bagian fabrikasi di industri PT INKA (Persero) Madiun. Penelitian dilaksanakan pada bulan Maret 2025 di PT INKA (Persero) Madiun. Hasil dari rekapan data kemudian diolah dengan metode *Job Safety Analysis* (JSA) dan *Hazard Identification Risk Assessment and Risk Control* (HIRARC) sehingga dapat dianalisis dan diketahui risiko tertinggi serta langkah pengendalian pada industri PT INKA (Persero) Madiun.

Hasil : Hasil dari penelitian ditemukan bahwa dari 31 proses produksi bagian fabrikasi terdapat 106 potensi bahaya, dengan 51 potensi bahaya tinggi dan tidak dapat diterima, 53 potensi bahaya sedang dan dapat ditoleransi, serta 2 potensi bahaya rendah dan secara umum dapat diterima. Terdapat 5 prioritas risiko yaitu kebakaran dengan penilaian risiko 15, tangan tertumbuk mesin dengan penilaian risiko 16, jari tangan terpress dengan penilaian risiko 16, tangan tersengat listrik dengan penilaian risiko 15, kebisingan dengan penilaian risiko 12.

Kesimpulan : Berdasarkan identifikasi JSA dan HIRARC di area fabrikasi dan telah dilakukan pengendalian tambahan pada potensi bahaya sehingga tidak ditemukan potensi bahaya tinggi, 49 potensi bahaya sedang, serta 57 potensi bahaya rendah.

Kata Kunci : Bahaya, Risiko, K3, JSA, HIRARC