

ABSTRACT

PT XYZ is a company with three business units: the first one is the Industrial Machinery and Equipment (MPI) division, the second is the foundry, and the third is the Project Management and Services (MPJ) unit, along with a subsidiary engaged in machine manufacturing. In the production of Pressure vessels, PT XYZ already has Occupational Health and Safety (K3LH) Standard Operating Procedures (SOP) and hazard identification in place. However, for the past four years, PT XYZ has not updated its identification of work-related accident risks and K3LH SOP. Additionally, there has been an increase in work-related accidents at PT XYZ in the last three years. The objective of this research is to identify hazards in the preparation activities of the Pressure vessel project and provide necessary improvement recommendations. Based on the mentioned issues, the methods used in the proposed design stage are Hazard Identification, Risk Assessment, and Risk Control (HIRARC) and Fault Tree Analysis (FTA). HIRARC is a process to identify hazards that may occur in routine or non-routine activities within the company, assess the risks of these hazards, and create hazard control programs to minimize their risk levels, with the aim of preventing accidents. Meanwhile, FTA is used to identify and analyze various possible failures that may occur in a system. The research results show that there are 67 potential hazards in the preparation activities of the Pressure vessel project. Based on these findings, the author provides recommendations starting from the HIRARC worksheet, Personal Protective Equipment (PPE) proposals, and K3LH SOP (Occupational Health and Safety and Environmental Protection). With these recommendations, it is hoped that the company can update its risk identification and K3LH SOP, which have not been reviewed for four years. Moreover, the PPE proposal recommendations can reduce work-related accidents so that the company can achieve zero accidents.

Keywords: *Workplace accidents, Personal Protective Equipment (PPE), HIRARC, Occupational Health and Safety and Environmental Protection (K3LH)*