ABSTRACT

Occupational Health and Safety (K3) has application to an important role for implementing the subject and object. K3 provide assurance of safety both in the field of economic and non-economic. One effort in applying K3 in the industry is to conduct risk management for all activities that take place in the industry. This study was conducted to analyze the risk assessment to a production process that has a degree of danger and high risk using the Fault Tree Analysis (FTA). In addition, the basic cause of the occurrence of this study will be known and can be acted upon.

This research was conducted with cross-sectional design using a quantitative approach. The method used in this study are the observations and interviews with employees, supervisors, and staff safety. Sampling was carried out by means of the total population in the study area. The study was conducted during working hours by observing the bustle of the respondent.

Explosion hazards and risks is contained in the highest production of Electric Arc Furnace (EAF). The explosion came from a variety of causes that occur in the melting furnace. In this study generated five groups of basic causes that led to the explosion at the EAF. In general, the cause will be the main causes that lead to unsafe scrap and shell leaks.

The conclusion of this study is the implementation of the five groups of the basic causes of the potential danger of an explosion at the EAF. The fifth group is the basic cause of not having control efforts even though there have been efforts to minimize errors. In general, the cause of the five basic groups is the human factor. Training and further monitoring at work became one of the recommendations to be recommendation enough control and follow-up of this study.

Keywords: EAF, explosion, FTA, *risk assessment*.