

SUMMARY

Deldana Mandala Putra, Department of Industrial Engineering, Faculty of Engineering, University of Brawijaya, November 2015. *Evaluation and Improvement of Safety and Health System Using Hazard and Operability (HAZOP) Method (Study Case: PT. INKA)*, Academic Supervisor: Mochamad Choiri and Remba Yanuar Efranto.

PT. INKA is one of the train service company in Madiun. PT. INKA produces carriages and train which already since its establishment in 1977. However with higher production level, problem of work accident is still happen. That condition happen due to the environment condition around the machine which is quite dangerous and the lack of occupational safety and health awareness by the workers. Based on that situation it is need to do evaluation of those accident so the cause can be found.

The method of this research is Hazard and Operability (HAZOP). HAZOP is an attempt to analyze the accidents occurred and aims to determine the source of the hazard, cause and provide action (improvement) which are summarized in HAZOP worksheet. Based of HAZOP the research is procecd by calculating the risk using risk matrix. The risk value is obtained by taking a line between the severity score (severity) and likelihood (frequency). Then improvement recommendations of accident included in the high risk (T) and the extreme risk (E) will be proposed.

The result of this research indicates there are 23 findings of potential hazard in assembly production area which categorized into four sources of hazard as following: the attitude of the workers, cabling, wet floor, foreign objects in working area. The research shows there were 3 hazard which are categorized as high risk (T) and extreme risk (E) in assembly production area. There are 5 step of welding process, where as it is identified that there are 3 potensial hazard which already occurred. Those 3 are poor attitude of the worker which belong to extreme risk level, cable installation and material which belong to high risk level. Improvement recommendations of worker attitude are as following make a standart operating procedure (SOP) and training schedule K3 about the importance and benefit of personal protective equipment (PPE), make a standart operating procedure and worksheet of PPE exercise in working area hence workers can read the potential hazard, make a control sheet of PPE violations use in assembly production area, and conduct SOP safety talk which held once in every week. The improvement for wire installation is by repairing the damaged wires and controlling it timely (using check list & SOP) so that the wire always in the optimal condition.

Keywords: HAZOP, Occupational Safety and Health, Work Environment