

Identification Of Hazards And Factors Related To Risk Management Implementation To Workers At PT. Makassar Tene

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Abstract

Occupational health safety risk management is an effort to manage risks to prevent unwanted accidents in a comprehensive, planned and structured manner. From the data on accident cases that occurred in 2018-2019 at PT Makassar Tene, there were 25 accidents, including electric shocks, being hit by heavy equipment, slipping and being exposed to dust in the power plant department. The purpose of this research is to identify hazards and factors associated with the implementation of risk management for workers at PT. Makassar Tene.

This type of research is an analytical survey with a cross sectional study approach, while the sample in this study were 58 workers at PT Makassar Tene. Data processing using SPSS, data testing using the chi-square test. Presentation of data in tabular form and accompanied by narration.

The results showed that there was no relationship between hazard identification and risk management at the Power Plant Department of PT. Makassar tene. By using chi-square the value of $p = 1,000$ is obtained. There is a relationship between risk analysis and risk management at PT. Makassar tene using the chi-square value obtained $p = 0.004$.

The conclusion Is There is no relationship between hazard identification, likelihood risk analysis, and risk management, while in probability risk analysis there is a relationship between risk management with $p = 0.004$. There is no relationship analysis with risk exposure (exposure) risk management at the Power Plant Department PT. Makassar tene.

Keyword: risk management, hazard identification, consequences of exposure.

1. Introduction

OHS risk management is an effort to manage risks to prevent unwanted accidents in a comprehensive, planned and structured manner in a good system so that it allows management to improve results by identifying and analyzing existing risks. A structured risk management approach can promote continuous improvement¹. Risk management is closely related to K3. The emergence of aspects of K3 is caused by risks that threaten the safety of workers, facilities and work environment so that they must be managed properly^{3,4}.

The occupational accident rate in Spain was found for occupational accidents and factors such as high school education level (OR = 2,082), full-time job (OR = 4,814), having three or more jobs (OR =

2,593), radiation exposure, asthma (OR = 4,880), and alcohol consumption (OR = 4,620), according to each marked block, which significantly increases the chance of a work accident occurring. Managers and legislators must pay attention to factors that increase the chance of accidents to develop policies or preventive measures. Hazard identification is carried out with the aim of knowing the potential hazards of a material, tool or system, as for the consideration in identifying the source of the hazard, including by paying attention to conditions and events that may pose a hazard risk and the types of accidents that may occur from the work performed. The researcher uses the Job Safety Analysis (JSA) method. In this step the researcher also classifies similar hazards that pose the same risk^{5,6,7,8,9,10.}

Seeing the industrial potential in the eastern region that still needs to be developed, the Makassar Tene refined sugar factory has proven a supply of good quality sugar at competitive prices compared to prices on the island of Java. Based on the observation at the location, it shows that at the marketing stage, the packaged sugar products are transported to trucks. However, the problem here is that the energy used in transporting sugar sacks from the warehouse to the trucks is human labor and is done by laborers without using PPE^{10,11,12,13},

PT. Makassar Tene produces an average production of 1000 tons / day from an installed capacity of 1800 tons / day, PT. Makassar Tene employs around 470 employees who prioritize the workforce around the factory who come from Parangloe village. PT. Makassar Tene has operated the IPAL (Valley Water Treatment Plant), after processing it and then releasing it to the river body, currently the valley water treatment operation at the IPAL is operating optimally and has reached the Wastewater quality standard parameters set by the Governor of South Sulawesi.

Based on preliminary observations, workers at the Power Plant Department at the sugar factory PT. Makassar Tene is 68 workers. The daily activities of workers in the Power Plant department have the potential to experience work accidents such as electric shocks, being hit by heavy equipment, slipping and being exposed to dust. Therefore, workers still have to pay attention to safety and health at work. From the data on accident cases that occurred in 2018-2019 at PT Makassar Tene, there were 12 cases of accidents, including being pinched, cut by an electric sewing knife, slipped, burned and dislodged a tendon in the hands of workers at the PT's power plant department. Makassar Tene.

2. Research Method

The type of research used is a quantitative approach with observational analytic research type with a cross sectional study design. The purpose of this research is to identify hazards and factors associated with the implementation of risk management for workers at PT. Makassar Tene. Data processing using SPSS, data testing using the chi-square test. Presentation of data in tabular form and accompanied by narration.. The methods and techniques used in data collection for the preparation of this report are as follows:

a. Literature or literature

By using the library method or literature, namely the existence of books and references related to the existence of OSH risk management, besides that the researchers also conducted an analysis of the official documents belonging to PT Makassar Tene in the form of procedures for identifying potential hazards and risks, SOPs and other documents that conducted by researchers to support research and report preparation

b. Direct Observation (Observation)

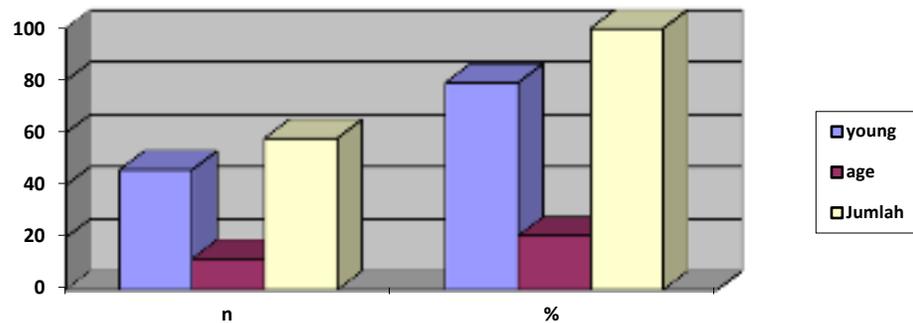
Observation or observation is a technique or way of collecting data by observing ongoing activities. In this special task, the researcher conducted research on the Training & K3 and Production

divisions, especially at PT Makassar Tene which was used later to obtain data which would then be processed (Sukmadinata, 2010).

3. Result and Discussion

1. Age

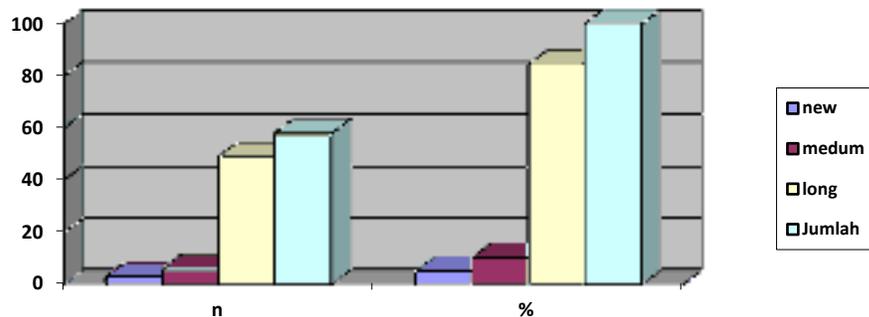
Graph 1
Distribution of Respondents by Age of Workers
the power plant department of PT. Makassar Tene



Based on graph 1 shows that of the 58 respondents, it can be seen that generally those who have a young age are 79.3% while the old ones are 20.7%.

2. Distribution of Respondents by Working Period

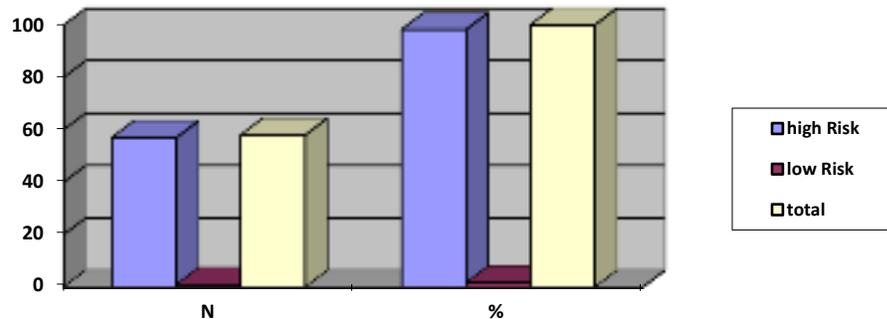
Graph 2
Distribution of Respondents based on Service Period
Workers at the power plant department of PT. Makassar Tene



Based on graph 2 shows that of the 58 respondents, it can be seen that generally those who have a new working period are 5.2% and a moderate working period is 10.3% while the Old work period is 84.5%.

3. Distribution of Hazard Identification Frequency

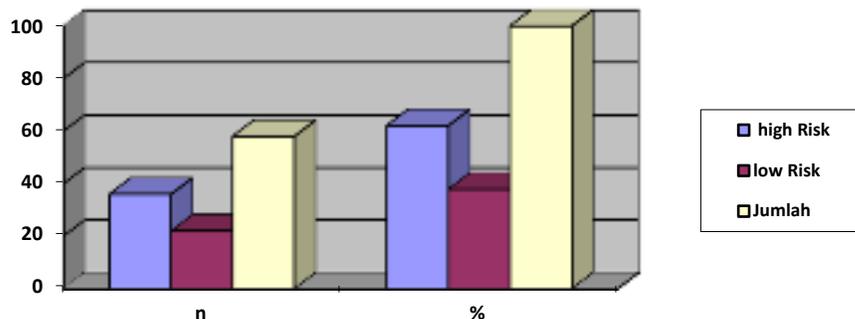
Graph 3
Distribution of Respondents Hazard Identification at the Powert Plant Department PT. Makassar Tene



Based on Figure 3 shows that of the 58 respondents, it can be seen that in general, a hazard identification in the Department of the Powert Plant which is high risk is 98.3% and the low risk is 1.7%.

4. Frequency Distribution of the probability risk analysis (Probability).

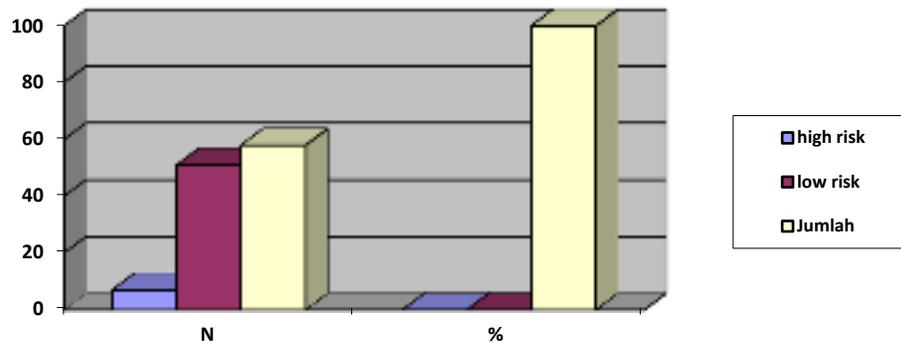
Graph 4
Distribution of Respondents based on a Possible Risk Analysis (probability) at the powert plant department of PT. Makassar Tene



Based on Figure 4 shows that of the 58 respondents, it can be seen that in general the Possible Risk in the Powert Plant Department is 62.1% high and the low risk is 37.9%.

5. Analysis of risk exposure (Exposure)

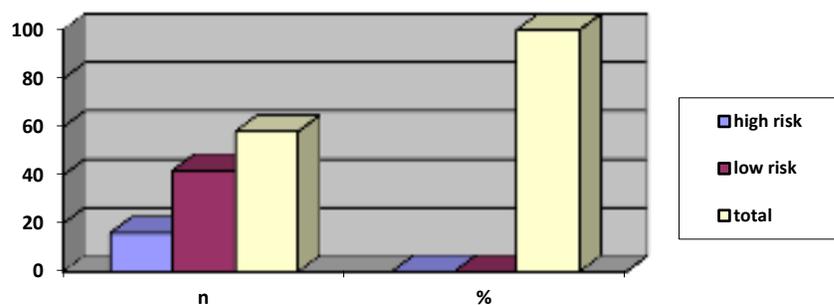
Graph 5
Distribution of Respondents based on exposure risk analysis
at the Department of the Powert Plant PT. Makassar Tene



Based on Figure 5 shows that of the 58 respondents, it can be seen that in general the exposure risk in the Department of Powert Plant which is high risk is 12.1% and the low risk is 87.9%.

6. Risk analysis of consequences (Consesquence).

Graph 6
Distribution of Consequences Risk Analysis Respondents
at the Department of the Powert Plant PT. Makassar Tene



Based on Figure 6 shows that of the 58 respondents, it can be seen that in general the Consequence Risk in the Powert Plant Department is 27.6% high risk and 72.4% low risk.

In cases related to chemicals, it is necessary: possession of material safety data sheets (MSDS) for each chemical used, grouping chemicals according to the type of active ingredients contained, identifying the solvent used, and accompanying inert materials, including their toxic effects . When two or more risk factors are found simultaneously, it is possible to interact and become more dangerous or

may also become less dangerous. For example, a work environment that is exposed to dust and respiratory problems will be easier^{3,4, 14}.

Based on data obtained from the results of research on workers of the department power plant PT. Makassar Tene, which shows that 58 (100%) workers identified a high hazard at work and 0 workers identified a low hazard at work. Of the 58 worker respondents who identified high-risk hazards at work, there were 29 workers (50.0%) who met the Risk Management requirements and there were 25 workers (50.0%) who did not meet the Risk Management requirements^{15,16,17}.

Risk control is an important step in overall risk management, which at this stage is the realization of risk management efforts within the company. Risk control can use a hierarchy of risk control. The Hierarchy of Control approach is risk control by prioritizing the selection and implementation of controls related to OHS hazards. The results of the research support the proposition that implementing risk management throughout the innovation process reduces the risks associated with uncertainty and the complexity of developing and implementing new business models. This study shows that risk treatment options need to be considered comprehensively for appropriate and holistic solutions. Every change can create new problems, challenges and risks. If each risk is handled individually, addressing one strategic risk is likely to generate new operational challenges. For example, the sales volume in the local Provital market serving so far is low and to grow the company is eager to enter the US market. However, the entire supply chain consists only of local players^{5,6,18,19}.

Hazard identification is carried out with the aim of knowing the potential hazards of a material, tool or system, as for the consideration in identifying the source of the hazard, including by paying attention to conditions and events that may pose a hazard risk and the types of accidents that may occur from the work performed. The researcher uses the Job Safety Analysis method. In this step the researcher also classifies similar hazards that pose the same risk^{3,6,9,10}.

After all risks are identified, a risk assessment is carried out. Risk assessment is a method to determine the level of risk of an activity. The parameters used to carry out a risk assessment are probability and severity. Where the two parameters will be multiplied so that the risk value is obtained, then the risk value is categorized based on risk mapping. If the results of the questionnaire have passed the validity and reliability test, risk control can be carried out based on the risk mapping category. Determination of the risk control mechanism for hazards that arise using 5 appropriate approaches applied to previously identified hazards, namely using elimination, substitution, engineering, administration and PPE^{11,15,18}.

Risk management is the process of identifying risk, measuring it to reduce risk. Management is a structured and systematic process of identifying, measuring, mapping, developing risk management alternatives, and monitoring and controlling risk management. Based on data obtained from the results of research on workers of the department power plant PT. Makassar Tene which shows that of the 58 respondents who have a high probability risk at work, 11 workers (32.4%) meet the risk management requirements and 23 workers (67.6%) do not meet the risk management requirements. While there are 18 workers (75.0%) who meet the risk management requirements and there are 6 workers (25.0%) who do not meet the risk management requirements.^{18,19,20}

PT Makassar Tene, although located in Eastern Indonesia, has developed an international standard refined sugar processing system with evidence that PT Makassar Tene has achieved the FOOD SAFETY, ISO 22000 standard which guarantees that PT Makassar Tene products are safe for consumption. PT Makassar Tene's determination to be the best in Southeast Asia is a goal that will be achieved by including "Green Environment" in company policy.

4. Conclusion

There is no relationship between hazard identification, likelihood risk analysis, and risk management, while in probability risk analysis there is a relationship between risk management with $p = 0.004$. There is no relationship analysis with risk exposure (exposure) risk management at the Power Plant Department PT. Makassar tene.

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