

BEHAVIOUR BASED SAFETY

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ABSTRACT

Occupational safety and health or often abbreviated as SHE are variables that can provide peace in carrying out their work. Especially if the work that someone does is risky. Occupational health is a situation and condition that is free from physical and psychological disturbances. Occupational health and safety is a field related to the health, safety and welfare of people who work. Occupational safety and health refers to the physiological-physical and psychological conditions of the workforce caused by the work environment provided by the company. Thus, it can be concluded that occupational safety and health is a condition in a healthy and safe job both for work, as well as for the community and environment around the organization or workplace, so that employees can do their work calmly and with high motivation. Implementation of behaviour based safety is to perform job safety analysis, know hazard, do hazard identification risk assessment risk control and personal protective equipment. Behaviour Based Safety is a systematic application of psychological research on human behaviour on safety issues in the workplace. The safety behaviour process is usually demonstrated by giving observers flexibility in carrying out their duties, rewarding those who perform safety behaviours, providing tools and assistance for actions that must be taken immediately, helping to compile and carry out feedback, and increase the initiative to carry out the behaviour. Safety includes protection of employees from injuries caused by work-related accidents. Health refers to the release of employees from physical or emotional illness. Safety risks can be significant for employers, therefore, safety programs can be designed to achieve their objectives in two main ways. The first approach is to create a psychological environment and employee attitudes that enhance safety. A second approach to safety program design is to develop and maintain a safe physical work environment.

Keywords: Psychology, Behaviour, Safety, Health and Hazard.

INTRODUCTION.

Occupational safety and health or often abbreviated as SHE are variables that can provide peace in carrying out their work. Especially if the work that someone does is risky. It takes provisions that regulate the safety and health of workers so that employees can carry out their duties calmly. For that, every organization needs to pay attention to these two aspects. Occupational health is a situation and condition that is free from physical and psychological disturbances by the organization to its employees. Occupational health and safety is a field related to the health, safety and welfare of people who work in an institution or a project site. The purpose of SHE is to maintain a healthy and safe work environment. SHE also protects co-workers, workers' families. consumers and others who may also be affected by working conditions.

Occupational safety and health are quite important for morale, legality and finances. All organizations have an obligation to ensure that workers and others involved remain safe at all

times. The practice of SHE includes prevention, sanctions, compensation, as well as wound healing and care for workers, as well as providing health care and sick leave. SHE is related to occupational health sciences, safety engineering, industrial engineering, chemistry, health physics, organizational and industrial psychology, ergonomics and occupational health psychology.

A safe and healthy workplace is necessary for everyone to carry out their work effectively and efficiently. Conversely, if the workplace is disorganized and there are many dangers, then damage and disease are inevitable, resulting in reduced productivity and lost income for workers. Despite the fact, entrepreneurs around the world have carefully planned their business strategies, many still ignore this important issue because the costs incurred are considered large. According to the ILO, each year there are more than 250 million accidents at work and more than 160 million workers become ill due to hazards in the workplace. What's more, 1.2 million workers die from accidents and illnesses at work. Figures show that the human and social costs of production are too high (International Labor Organization, 2013).

From a scientific perspective, occupational safety and health can be interpreted as knowledge that is applied in an effort to prevent the possibility of accidents and illnesses due to carrying out tasks in the workplace. The implementation of occupational safety and health in an organization must be carried out jointly by both leaders and employees so that the possibility of accidents and diseases can be avoided. In its implementation, leaders can assist occupational safety and health officers in the workplace by preparing divisions and skilled workers in the field of occupational safety and health.

In fact, since time immemorial, humans have worked to make ends meet. While working they experience accidents in the form of injuries or wounds, with their minds they try to prevent similar accidents from happening again. In the era of globalization and the free market WTO and GATT in effect in 2020, occupational safety and health is one of the prerequisites set out in the economic relations of trade in goods and services between countries that must be fulfilled by all member countries, including Indonesia.

LITERATURE REVIEW

A. Definition of Work Safety

Safety comes from the basic word safe which are associated with the state of being free from a condition of injury (accident). Therefore, safety as a scientific approach as well as a practical approach will study several factors that can cause accidents and seek to develop various ways to minimize the occurrence of accidents. Silalahi dan Rumondang (in Widodo, 2015), safety is an attempt to prevent any unsafe actions or conditions that can lead to accidents. Next, Leon C. Meggison (in Mangkunegara, 2000) argues that work safety indicates conditions that are safe or safe from suffering, damage and loss in the workplace. Philosophically, salvation is interpreted as a thought and effort to ensure the integrity and perfection of both the physical and spiritual workforce in particular, and humans in general, as well as the cultural results and their work. From a scientific perspective, it is interpreted as knowledge and application in an effort to prevent the possibility of accidents and diseases due to work (Purnama, 2010). Therefore, work safety is a very important variable to pay attention to so that a work program can be completed properly. In a safe and comfortable situation, employees will work optimally and with high motivation. Meanwhile, Slamet (2012), defines work safety as a state of avoiding danger while doing work. In other words, work safety is one of the factors that must be done during work, because essentially no one wants an accident to occur in carrying out their duties. Work safety is very dependent on the type, form and environment in which the work is carried

out. Thus it can be concluded that work safety is a situation and condition that can guarantee the prevention of any inconvenience in carrying out work so that employees can carry out their duties safely and comfortably.

B. Definition of Occupational Health

Health comes from the basic word "healthy" which means not only free from illness, but also physically, mentally, and socially. Therefore, the definition of health in this case is more accurate with well-being. Health as a scientific approach as well as a practical approach that seeks to study the various factors that can cause humans to suffer from various diseases and also carry out various ways of development to prevent diseases that can attack humans, and lead to healthier ones. According to WHO in 1948, it was explained that health is a state of physical, mental, and social well-being and not just an absence of illness and weakness. Furthermore, in 1986, WHO in the Ottawa charter stated that health is a resource for everyday life, not a goal of life. Health is a positive concept that emphasizes social and personal resources, as well as physical abilities. Meanwhile, according to Law Number 23 of 2004, it is explained that health is a state of well-being in body, soul, social and mental aspects that enable everyone to live productively socially and economically. According to Parkins (in Widodo, 2015), health is defined as a dynamic and balanced state of balance between body shape and function that can make adjustments, so that it can overcome external disturbances. Health conditions should be a concern because workers are movers or construction assets. Based on the description above, it can be concluded that occupational health is a condition of the physical, mental and social welfare of employees in carrying out the work assigned to them and at their place of work, which is indicated by the absence of illness or weakness.

C. Definition of Occupational Safety and Health

Occupational safety and health refers to the physiological-physical and psychological conditions of the workforce caused by the work environment provided by the company. Philosophically, occupational safety and health is interpreted as a thought and effort to ensure the integrity and physical and spiritual perfection of the workforce in particular and humans in general, as well as the work and culture towards a just and prosperous society. Meanwhile, from a scientific perspective on occupational safety and health it is explained that all knowledge and its application is interpreted as an effort to prevent occupational accidents, occupational diseases (PAK), fires, explosions, and environmental pollution. OHSAS (Occupational Health and Safety Management System) 18001: 2007 which has been changed to ISO 45001: 2018, describes all conditions and factors that can have an impact on occupational safety and health for workers and other people (contractors, suppliers, visitors and guests) at workplace. John Ridley (in Boby Shoantosa, 2000), defines occupational safety and health as a condition in a healthy and safe job both for work, as well as for the community and the environment around the factory or workplace. Occupational safety and health refers to the physiological-physical and psychological conditions of the workforce caused by the work environment provided by the company (Jackson, 1999). According to Mangkunegara (2002), occupational safety and health is a thought and effort to ensure the wholeness and perfection of both the physical and spiritual workforce in particular, and humans in general. Thus, it can be concluded that occupational safety and health is a condition in a healthy and safe job both for work, as well as for the community and environment around the organization or workplace, so that employees can do their work calmly and with high motivation.

METHODOLOGY - IMPLEMENTATION OF BEHAVIOUR BASED SAFETY

A. Job Safety Analysis (JSA)

Job Safety Analysis (JSA) is an analysis of work carried out before the work begins with regard to the hazards contained in the work. The purpose of the Job Safety Analysis (JSA) is to find potential hazards at each stage of the work process series and try to eliminate them.

In order to ensure the safety of a job, it is necessary to ensure the control of potential hazards in every activity, task and stage of the job. The steps for carrying out the JSA are as follows:

1. Breaking down work activities into tasks or describing the stages of work and the tools used.
2. Identify the potential hazards that may exist, the impacts caused and the likelihood or frequency of incidents that have occurred.
3. Establishing actions to control hazards or eliminate them altogether.

B. Hazard

Danger is a source, situation or action that has the potential to cause harm to humans or illness. Hazards can be in the form of materials, machine parts, forms of energy, work methods or work situations, etc.

Sources of danger include people, products, materials and equipment, work processes and procedures, equipment and technology, work places and locations, the natural environment and external parties such as customers, suppliers or contractors.

The types of potential hazards include:

1. Physical hazards, such as falling objects.
2. Chemical hazards, for example scalded by sulfuric acid solutions.
3. Electrical hazards, such as electric shock.
4. Mechanical hazards, such as cutting the machine cut.
5. Biological hazards, for example the spread of harmful bacteria.
6. Ergonomic hazards, for example the design of cutting tools that have the potential to injure the wearer.
7. Psychological hazards, such as intimidation of violence from the work environment.

To identify hazards, the following steps are carried out:

1. Determine work activities.
2. Conditions and events that can create a potential hazard.
3. Types of accidents and occupational diseases that may occur.

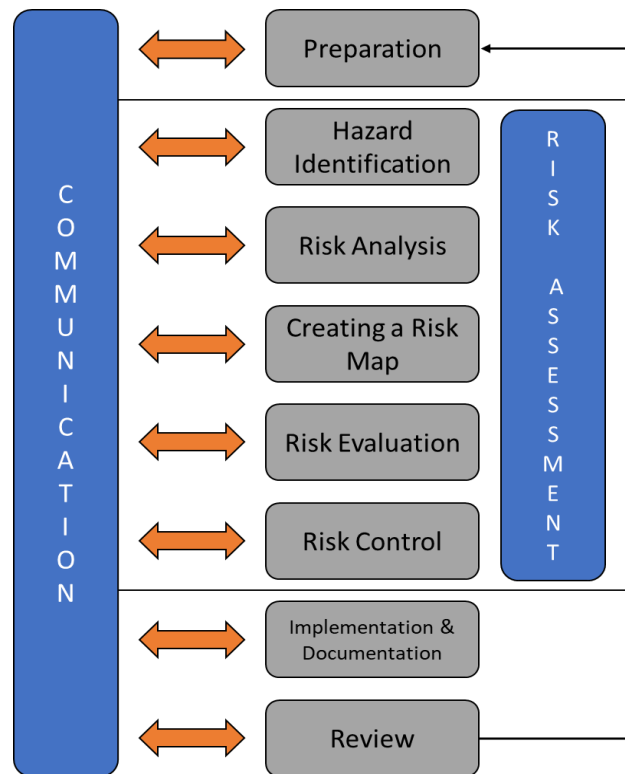
C. Hazard Identification Risk Assessment Risk Control (HIRARC)

Risk assessment is a process for:

1. Identifying and measuring each potential source of danger from each stage of work carried out by taking into account conditions and events that can cause potential hazards and types of work-related accidents and diseases that may occur and have an impact on safety and health in the work environment.
2. Assessment of the amount of risk is a process to determine control priorities for the level of risk of occupational accidents and diseases.
3. Measures to control the risk of accidents and occupational diseases are carried out on the basis of certain priorities.

In the context of implementing an active and comprehensive occupational safety and health management system and risk management process, risk management in occupational safety and health includes a process that begins with preparation activities both teams and forms;

Identify activities and sources of potential hazards, analyse the impact and likelihood of events, measure opportunities and consequences, carry out risk assessments and calculations and scale, then determine risk ratings and actions to eliminate and reduce risks on an ongoing basis, until the risk is accepted.



1. Hazard identification is the stage of finding, recognizing and describing the stages of activity of a work carried out by a unit that produces or supports a product or service, and also the stages of finding, recognizing and describing the potential hazards contained in each stage of activity or good work that arises from machines, tools and materials, work environment, work methods, nature of work and production processes, as well as the stages of including each hazard source in a hazard list.
2. Risk in the context of occupational safety and health is the combination and possibility of a hazard or exposure to the consequences of an accident or illness from the disease caused by the event or exposure. From this definition, risk consists of 2 (two) dimensions, namely the impact and the frequency of occurrence of a hazard. Analysis of the two dimensions of a risk will produce a level of risk.
3. To understand a risk level, it is necessary to make a risk map first. The risk map is made of a combination of the levels of impact of a risk with the level of likelihood of an event.
4. The risk evaluation stage is basically taking measurements. Measurements in this guideline are carried out using a semi-quantitative method, namely by assessing how big the chances and consequences are if a risk actually occurs. Risk evaluation is carried out by referring to a predefined "scale".
5. Risk control includes documenting and implementing standard policies for workplaces, designing factories and materials, as well as procedures and work instructions to regulate the production of goods and services. Risk control methods and the effectiveness of the percentage reduction in the level of risk can be graded. The levels of risk control are:
 - a. Elimination is the elimination of a process method or material to remove a hazard (100%).

- b. Substitution is replacing processes, materials or substances that have less potential hazards (85%).
- c. Technical engineering is modifying process methods or materials to minimize hazards (70%).
- d. Separation is isolating / keeping danger away from people with protection of safety, space or separation of time (55%).
- e. Administrative engineering is regulating the time or condition for the occurrence of a hazard risk (40%).
- f. Training is increasing skills so as to reduce the hazards of the work being carried out (25%).
- g. Personal protective equipment is used as a last resort, properly designed and fitted when other controls are not possible (10%).

D. Personal Protective Equipment

Personal protective equipment is a device that has the ability to protect a person whose function is to isolate part or all of the body from potential hazards in the workplace. Employers are required to provide personal protective equipment for workers / laborers in the workplace in accordance with Indonesian National Standards or generally accepted standards. There are so many potential hazards in the workplace, including toxic gases, flammable gases, lack of oxygen, stockpiling hazards, dangers of using mechanical equipment, hazards from the work environment such as noise, slippery floors, radiation etc. Thus, it is necessary to carry out a work hazard control program, which includes a program for the use of personal protective equipment.

The use of personal protective equipment is a recommended last resort and even mandatory, although it is not always the most effective way to prevent occupational accidents and diseases. However, if the work accident prevention efforts as mentioned above cannot be carried out perfectly due to limitations, the use of personal protective equipment becomes very important.

There are quite a lot of types of personal protective equipment, here are some types of personal protective equipment and their functions that are most often used in the workplace:

1. Head protection device is a protective device that functions to protect the head from collisions, stumbling, falling or being hit by sharp objects or hard objects that float or slide in the air, exposed to heat radiation, fire, sparks of chemicals, microorganisms (micro-organisms) and extreme temperatures.
2. Eye and face protection is protective equipment that serves to protect the eyes and face from exposure to hazardous chemicals, exposure to particles floating in the air and in water bodies, splashes of small objects, heat or hot vapor, ionizing electromagnetic wave radiation. or non-ionizing, light emitting, collision or blow to hard objects or sharp objects.
3. Ear protection is a protective device that serves to protect hearing aids against noise or pressure.
4. Respiratory protective equipment and its equipment are protective devices that function to protect the respiratory organs by channeling clean, healthy air and filtering chemical contaminants, micro-organisms, particles in the form of dust, fog (aerosol), steam, smoke, gas / fume etc.
5. Hand protection (gloves) is a protective device that functions to protect the hands and fingers from exposure to fire, heat, cold temperatures, electromagnetic radiation, ionizing radiation, electric currents, chemicals, collisions, blows and scratches, infection with pathogens. (viruses, bacteria) and microorganisms.

6. Foot protective equipment serves to protect the feet from being hit or collided with heavy objects, including sharp objects, exposure to hot or cold liquids, hot steam, exposure to extreme temperatures, exposure to hazardous chemicals and microorganisms and slipping.
7. Protective clothing serves to protect the body partially or all parts of the body from the dangers of extreme hot or cold temperatures, exposure to fire and hot objects, sparks of chemicals, hot liquids and metals, hot steam, impact with machines, equipment and material, scratched, radiation, pathogenic micro-organisms from humans, animals, plants and the environment such as viruses, bacteria and fungi.
8. Individual fall protection equipment serves to limit the movement of workers so they do not enter places that have the potential to fall or keep workers in the desired work position in a tilted or dependent state and restrains and restricts workers from falling so that they do not hit the ground floor, for example, body safety belts (harness) and safety rope.
9. The buoy functions to protect users who work on the water or on the surface of the water to avoid the danger of drowning and / or adjust the buoyancy of the user so that they can be in a negative buoyant or neutral buoyant in the water.

RESULTS - BEHAVIOUR BASED SAFETY

Behaviour Based Safety is a systematic application of psychological research on human behaviour on safety issues in the workplace. In the early 1980s, a new perspective on occupational safety and health emerged, namely Behaviour Based Safety. Behaviour Based Safety emphasizes the aspects of human behaviour towards accidents in the workplace. It is realized that work accidents are strongly influenced by the behaviour of workers in carrying out their work.

Safety neglect behaviour can be minimized in a number of ways. First, eliminating hazards in the workplace by manipulating hazard factors or introducing physical controls. This method is done to reduce the potential for safety neglect behaviour, but it is not always successful because workers have the capacity to behave in neglect of safety and overcome existing controls. Second, changing the attitude of workers to be more concerned with their own safety. This method is based on the assumption that changing attitudes will change behaviour. Various efforts that can be made are through the campaign and safety training. This approach does not always work because it turns out that changes in attitude are not followed by changes in behaviour. what often happens is what should be done not what is actually done. Third, by providing punishment for behaviour that neglects safety. This method is not always successful because the punishment for the behaviour of safety neglect must be consistent and hastened. This is what is difficult to do because not all safety neglect behaviour can be directly monitored. Fourth, by giving rewards to employees who carry out safety behaviours. This method is difficult to do because the rewards obtained must be equivalent to the benefits obtained from neglect of safety behaviour.

One of the reasons for the success of safety maintaining behaviour is that it involves all workers in safety management. During this period, safety management was top-down with a tendency to stop at the management level. This means that workers who are directly related to safety neglect behaviour are not involved in the process of improving safety performance. Safety behaviour overcomes this by implementing a bottom-up system so that individuals with experience in their fields are directly involved in identifying safety neglect behaviour. With a comprehensive workforce involvement and driven by commitment, the process of enhancing the ownership of all workers towards the safety program will run well. In addition, another reason for the success of safety behaviour is by focusing on safety neglect behaviour to the smallest things that are the biggest contributors to work accidents in the organization.

Eliminating unsafe behaviour means eliminating the history of work accidents associated with that behaviour. To identify factors in the work environment that drive safety neglect behaviour, practitioners use applied behaviour analysis techniques and give certain rewards to individuals who identify safety neglect behaviour. Other practitioners also identified deficiencies in the management system that relate to quick handling so that they no longer lead to neglect of safety behaviour. The safety negligence and safety behaviour identified from this process are compiled in a checklist with a specific format along with the employee's approval. As the safety behaviour system matures, individuals engage in safety disregard behaviour on the list so that it can be controlled or eliminated. The main condition that must be met, namely the behaviour of neglect of safety must be visible and everyone can be transparent.

Management commitment to the safety behaviour process is usually demonstrated by giving observers flexibility in carrying out their duties, rewarding those who perform safety behaviours, providing tools and assistance for actions that must be taken immediately, helping to compile and carry out feedback, and increase the initiative to carry out the behaviour. safety at every turn. Support from management is very important because failure to implement safe behaviour is usually caused by a lack of support and commitment from management.

CONCLUSION

The global era continues to face occupational safety and health risks. Safety and health professionals with international experience say that one of the important trends that have emerged rapidly in the era of successful globalization is the shift towards a single safety management system that is applied to all operations worldwide. It also opens up many opportunities to improve performance. Multinational must have policies that can be applied to all operations, regardless of location. The global system does not need to be detailed, but there must be a framework or set of principles.

Many companies recognize that how to handle employees anywhere in the world can put their reputation at risk. Ethically no, it doesn't make sense for something done in one country to be done differently in another. A global system also offers a lot of operational efficiency.

Safety includes protection of employees from injuries caused by work-related accidents. Health refers to the release of employees from physical or emotional illness. The administrative role is to ensure a safe and healthy workplace for every employee. All kinds of work-related deaths and injuries cost a fortune not only in grief, but in economic loss as well. Significant financial costs are often carried over to consumers in the form of high prices. Thus, work-related deaths and injuries affect everyone, directly or indirectly. Safety risks can be significant for employers, therefore, safety programs can be designed to achieve their objectives in two main ways. The first approach is to create a psychological environment and employee attitudes that enhance safety. A second approach to safety program design is to develop and maintain a safe physical work environment.

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