

Optimization of HSE (Health, Safety, Environment) To Achieve Zero Accident in PT Sanpak Unggul

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Abstract. Zero Accident HSE application and implementation are intended to minimize the risk of accidents in production areas at PT Sanpak Unggul. Zero Accident implementation are important to prevent and reduce potential accidents that may occur due to negligence of employees while working. Through training and implementation of K3 about HSE in each work area will increase the employee awareness, encourage them to use Personal Protective Equipment (PPE) on the certain Zone. Accident occur because of two factors, environmental factors 15%, 85% human factors. Work accidents from obtained data shows the severity of Accident Severently Rate/ASR) reasonable in frequency and level of the crash (Accident Frequency Rate/AFR) on PT Sanpak Unggul is 0.57. The purpose of this study is to review how far Zero-accident implemetation at PT Sanpak Unggul. The methods are used in this research is qualitative method. Research Data in this study are obtained from interview, observation and Secondary data. To prevent accidents at work, every employee is required to comply with work safety procedures so that Zero Accident can be realized in the Company.

Keywords: health, safety, environment, zero accident, work accident

1. Introduction

In the current era of globalization, people are required to work faster and more precisely. The existence of human needs is one of the most important factors of the existence of work at the company. In fulfilling their needs, a company must not only be focused on its purpose in only seeking profit, but also must manage effectively and efficiently human factors that have an important role in achieving company goals.

PT Sanpak Unggul is one of the local companies that engaged production of plastic-based packaging with Blow and Injection Molding and equipped with Decoration machines such as Printing and Labeling machines. PT Sanpak Unggul located in the Gunung Putri area of Bogor, West Java. The number of workers in Sanpak Unggul is 535 people. Men: 224 people and Women 311 people.

HSE (Health, Safety, Environment) and competence are very important things in supporting employee performance. With the enactment of HSE (Health, Safety, Environment) properly, the issue of labor protection against work accidents will be minimized which has an effect on employee performance[1]. In addition to HSE (Health, Safety, Environment), competency also has an effect on employee performance that is good and right because it is related to one's abilities or skills in terms of interpreting skills, education and experience[2]

The purpose of this study was to find out the description of the application of HSE (Health, Safety, Environment) in achieving zero accident at PT Sanpak Unggul.

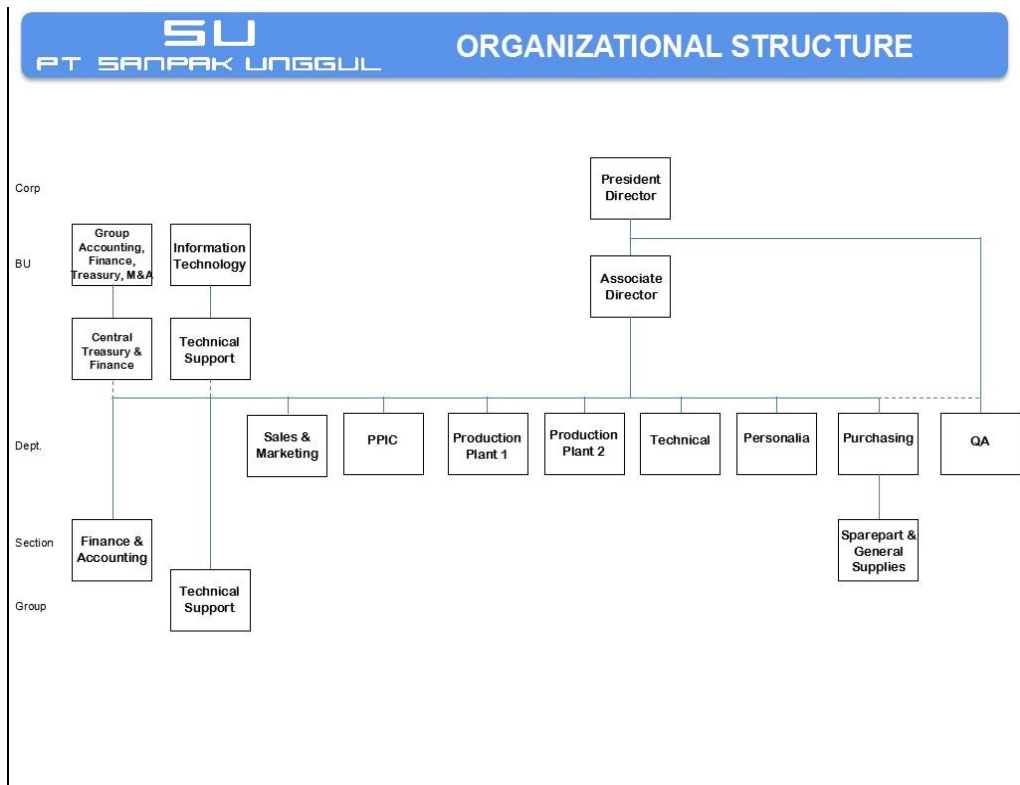


Figure 1. Organizational Structure at PT Sanpak Unggul

2. Research Methods

This study aims to determine the extent of the application of HSE in achieving zero accident. The method used is Deskriptive Qualitative research [3] as well as interviews, observations and calculations. The data used in this study is secondary data, about occupational safety and health at PT Sanpak Unggul.

3. Definitions

3.1. Definition of HSE

HSE is (Health, Safety, Environment) [1] is one part of the management of a company. HSE is structured systematically as a management system for an organization to achieve its goals, objectives and vision in the aspects of Occupational Safety and Health and the environment. As a system, this is a guideline and rules for all ranks, both the management team, field workers and sub-organizations within the organization or company. By maintaining HSE performance, it will have a positive effect on the company's financial condition [2]. Supervision of worker discipline and sanctions in violating

Occupational Health and Safety (K3) regulations need to be taken firm action from company Management [5].

3.2 Accident

According to **Satrya, 2005** Accident [6] is an event that is the result of a series of unplanned, unwanted, uncontrolled, unexpected events that can cause all forms of material and non-material losses both to human beings, physical objects such as wealth or assets, environment, the wider community. To achieve the zero accidents, the companies must manage several risk management and HSE (Environmental Safety Health)[1]. Safety culture is

mutually agreed on behaviors, beliefs, perceptions, and values related to Occupational Safety. Where safety culture is applied to achieve K3 performance levels that are understood and made a top priority in an Organization[7]. Labor behavior can actually be controlled by rigid or external approaches and approaches flexibly or internally. Strict or external approaches that create good and true safety rules and procedures are easily understood and applied by all employees. Although the approach is flexible or internally generated from the knowledge and principles gained from training and experience (Choirul, 2007)[8]. Mental health of the Labour forces are one of several accident factors [9].

3.3 Incident

According to **OHSAS 180001: 2007** [10] Incidents are defined as work-related events, where an injury, illness (regardless of severity) or death occurs or may occur. In this case what is meant by sickness is a condition of physical or mental disorder identified as coming from and getting worse due to work activities and work-related situations. Non-level workers managerial are those who are always in the field and are in contact with latent hazards due to exposure to the work environment. But often the facts on the ground are precisely among these circles the most frequent incidents / accidents [7]. Learn the incident can be a good step for all parties, so they can improve the safety [11].

3.4 Zero Accident

Minister of Manpower and Transmigration Regulation of the Republic of Indonesia No. PER-01 / MEN / I / 2007 concerning Guidelines for Providing Occupational Safety and Health Award (K3) states that "Zero Accident is a condition where there is no accident in the workplace which can cause workers / employees to temporarily be unable to work (STMB) for a period of 2x24 hours and / or causing cessation of process or damage to equipment without casualties where loss of work time does not exceed the next shift in a certain period of time and the number of working hours of certain people [12]". By keeping down the performance of Zero accident factor, Communication in the workplace is the part of achieving a safe environment for work by providing and receiving information about hazards and control and manage risks, influencing attitudes and behavior, and building commitment and ownership [13].

3.6 Occupational Health and Safety

According to Mangkunegara (2002, p.163) Occupational safety and health is a thought and effort to ensure the integrity and perfection of both physical and spiritual labor in particular, and humans in general, the work and culture to lead a just and prosperous society.

According to **Mangkunegara (2002, p.165)** that the purpose of occupational safety and health is

- Every employee is guaranteed safety and health both physically, socially and psychologically.
- For every equipment and work equipment to be used as well as possible.
- All production results are maintained safety.
- In order to guarantee the maintenance, improvement of employee nutrition health.
- In order to increase enthusiasm, harmony of work, and participation.
- To avoid health problems caused by the environment and working conditions.
- So that every employee feels safe and protected while working.

4. Research Results

4.1.1. Policy on HSE (Health, Safety, Environment) at Sanpak Unggul

The company is committed to fulfill customer, regulatory and other stakeholder requirements, to achieve the best quality of products that can make all stakeholders satisfied [14]. To achieve this commitment, the company establishes the following HSE policies:

- Providing safe and healthy working conditions to prevent injuries and illness while working.
- Comply with regulations and other requirements related to company operations.
- Eliminating hazards and reducing the risk of K3.
- Improve the HSE management system continuously.
- Involve workers in the form of consultation and participation.

4.1.2. Knowledge Level of HSE Regulations at PT Sanpak Unggul

Education determines the knowledge rate, the people with low-level education tend to be difficult accepting something new, that will indirectly affect the behavior of workers (Ramdayana, 2009: 24). The level of education plays a role in determining the breadth of knowledge of an employee (Ramdayana, 2009: 24). This can be seen when the interview is being conducted with several resource persons with junior high school and Bachelor level (S1). Employees with junior high school education answer briefly and didn't explain in detail when asked about the security rules in their work division. Occupational safety has a very wide socio-economic and cultural background. Education level, broad life background, such as habit, trust etc. closely related to the implementation of occupational safety. Safety must be instilled in childhood and become a habit of daily practice [15].

4.1.3. Requirements in PT Sanpak Unggul warehouse

- Food, drinks, sweets, Drug, cigarettes, and spit are Prohibited.
- Must use: Helmets, Gloves, Safety shoes specifically for warehouse operators.
- Clothes must be clean and neat.

4.1.4. Requirements in PT Sanpak Unggul warehouse Handling Products Related to Food Safety Government Regulation

Food Safety according to the Government Regulation of the Republic of Indonesia Number 28 of 2004 concerning food safety, quality and nutrition is the condition and effort needed to prevent food from possible biological, chemical and other objects that can interfere with, harm, and endanger human health .

- Move the product to a safe and tidy place
- Check for possible contamination :
 - If contaminated, appropriate handling is carried out
 - If it is not contaminated, the product is stored.

4.1.5. Zero Accident Criteria at PT Sanpak Unggul

The zero accident criteria applied by PT. Sanpak Unggul in accordance with Minister of Manpower and Transmigration Regulation of the Republic of Indonesia No. PER-01 / MEN / I / 2007 concerning Guidelines for Awarding Occupational Health and Safety Awards. To achieve zero accident at Sanpak Unggul (the Work Program) are.

- Procurement and obligation to use Personal Protective Equipment (PPE) which is carried out continuously by K3L officers, every worker / laborer has the Rights to get protection from Occupational Safety and Health (K3). Referred to in Law Number 13 of 2003 concerning Labor.
 - Installation of warning signs that are carried out continuously by K3L officers
 - Carrying out Work Permits on jobs that have a large risk and carried out continuously
 - Work Safety Training at PT Sanpak Unggul

This training activity was followed by all employees of PT. Sanpak Unggul which aims to see the parameters of operator awareness and basic knowledge about HSE (Health, Safety, Environment) in the work area. The things given in work safety training are as follows.

- Employees are given an understanding of work safety, this becomes an important point that in employees must be embedded in a commitment to work safety can be a good factor to achieve zero accident at PT Sanpak Unggul
- Understanding of PPE (personal protective equipment). Employees must understand PPE at PT. Sanpak Unggul in accordance to the standards, the operator must understand the functions of PPE such as: helmets, work uniforms, masks, gloves, safety shoes.

4.2.1. Work Accident Data

To determine the frequency of accidents, severity and to know the development of work accidents are calculated frequency rate, severity rate Period January-March 2019.

PT Sanpak Unggul	Inside Factory	Outside Factory	Total Missing Work Days	Total Workdays	Total Working Hours Without Losing Work Time
Accident Major / Medium	1 (Medium)	-	0,57	280,875 Work Hours (MH)	280,870 Work Hours (MH)
Minor Accident	4	-	0,57		

The Number of working hours without losing work days is calculated based on the incidence of accidents in the factory without losing work days more than 2 consecutive days

Because at PT Sanpak Unggul there had been a work accident that eliminated working hours, the value of the number of days lost due to workplace accidents = 0.57 so that the ASR value to date is 0.57.

From this work accident data, It clearly that the HSE implementation in the factory has been running with the established procedures. There are several activities in the factory that needs improvement. Some of the factors that cause workplace accidents in PT Sanpak Unggul are negligence of employees in using PPE (Personal Protective Equipment) at work, lack of understanding and awareness of the occupational safety and health. One improvement that can increase awareness in each employees.

No	Related Party Issues and Requirements	Risk or Chance	R/K	Risk Calculation				
				Mitigation-1	Chance	Impact	Risik Value	Category
A	B	C	D	E	F	G	H	I
1.	Internal - Automatic Door engine broken	Injury	R	Door reparation	2	1	2	R
2	Internal- Staff are not wear helmet when enter or exit the factory	Collision in the head	R	Charged, sanctioned or warned Training	1	1	1	R
3	Internal- Forklift Overspeed	Crash	R	Training	1	2	1	R
4	Internal - Employees do not use PPE	Injury, work-related illness	R	Briefing, training, reprimand, sanctions, warnings, provision of signs for using PPE	2	2	4	S
5	External - A fire in the factory next to it spread Fire		R	Light Fire Extinguisher and Hydrant checks Safety Induction	1	3	3	R
6	Internal Employees do not obey K3 rules		R	Safety Induction	2	2	4	S
7	External-CSOs rioted because they were not given illegal levies	Injury	R	Coordinating with CSOs	1	1	1	R
8	External - Flood in front of the factory	Submerged Production and Vehicle Machines	R	Coordination with the Government and other local companies to carry out repairs and maintenance of waterways	1	2	2	R

Table 1. Risk Assessment and Opportunity at PT Sanpak Unggul ISO 45001 category

From data above shown the chance of a work accident are from internal factors in the company, especially in the usage of PPE at work. Several employees are still don't use PPE at work. Every worker must know the risks that will occur on his job. Some violations of HSE regulations on PPE (Personal Protective Equipment) are occur.

4.2.2. Violation of HSE Regulations in the Use of Safety Helmets

The intensity usage of Safety helmet aren't well implemented because several violations, obligation to wear helmets in certain areas. The usage of safety helmets are important to protect the head from potential hazards and reduce the risk of injury. This low level of awareness is caused by the lack of strict regulation on HSE application. Sanctions for employees who violate HSE regulations are only made verbally.

4.2.3. Violation of HSE Rules in the Use of Gloves

The violation occurs by Employee with low level awareness, that can be seen from the production section where some employee are not wear gloves when working with tools. Indeed, gloves are only given to employees from the part. In overcoming this low level of employee awareness of the use of gloves, the company needs to socialize the work risks, so the employee will understand and safe while the using factory equipment, in the form of gloves due to the highest accident rates. often causes disability in the hand. The company must provide the suitable gloves for the employee based on type/level/risk of work.

4.2.4. Violation of HSE Rules in the Use of Safety Shoes

Several employees in the production department, are not wear safety shoes while working, and inside the production area. In addition, around factory area, also available a number of notice boards that say anyone entering the factory area must wear PPE, including safety shoes. In overcoming this violation, the actions taken by management are difficult to procure when replacing old safety shoes to new. This is in accordance with the implementation of K3 regulations according to DISNAKER (Labour Force) where employees must first be forced, then they will be forced and eventually become accustomed to implementing K3 regulations.

5. Conclusion

- Based on the results and discussion of the research that has been obtained, conclusions can be given as follows:
- HSE implementation in PT Sanpak Unggul is in a good category, but in terms of the use of PPE (Personal Protective Equipment) it still does not work because there are still some employees who do not use PPE according to HSE provisions applied by the company.
- Factors that cause work accidents because employees assume that work safety is not something to worry about and lack of sense of responsibility towards themselves
- In the work accident data obtained it is known that ASR and AFR at PT Sanpak Unggul is 0.57, which means that the implementation of HSE in the company has gone well.

References

- [1] H. N. Ardani, H. Santoso, and R. Rumita, "Health and Safety Risk Analysis of Division Mill Boiler Workers (Case Study at PT Laju Perdana Indah PG Pakis Baru, Pati)," *Ind. Enginerering Online J.*, vol. 3, no. 2, pp. 1–6, 2014.
- [2] A. H. Dj. Purwanto, B. Suharjo, U. Sumarwan, and H. K. Daryanto, "Implementing Health Safety Environment (HSE) Process Management to Improve HSE Performance, Competitive Advantage and Financial Performance," *J. Manaj. Teknol.*, vol. 13, no. 1, pp. 53–63, 2016.
- [3] Sugiyono, "Metode Penelitian Manajemen," *Alfabeta*, 2013.
- [4] J. W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 2013.
- [5] W. Hartono;, Y. Purwandari;, and Sugiyarto, "Analisis Sistem Manajemen Dan Keselamatan Kerja (SMK3) Terhadap Tingkat Kecelakaan Kerja Pada Proyek Pembangunan Gedung," *e- Jurnal MATRIKS Tek. SIPIL*, pp. 208–215, 2016.
- [6] M. Kadarisman and U. M. Jakarta, "Maritime Safety and Safety Policy," *J. Manaj. Transp. Dan Logistik*, vol. 04, no. 02, pp. 177–192, 2017.
- [7] D. Kurniasih and R. N. Rachmadita, "Pengukuran Budaya K3 Pada Tingkat Non Manajerial Dengan Menggunakan Cooper'S Reciprocal Safety Culture Model Di Pt. X," *J@Ti Undip J. Tek. Ind.*, vol. 8, no. 2, pp. 83–88, 2016.
- [8] I. Al Faris and F. Harianto2, "PENGARUH PERILAKU TENAGA KERJA DAN LINGKUNGAN KERJA YANG DIMODERASI FAKTOR PENGALAMAN KERJA DAN TINGKAT PENDIDIKAN TERHADAP KECELAKAAN KERJA KONSTRUKSI DI SURABAYA," *Semin. Nas. X – 2014 Tek. Sipil Its Surabaya Inov. Strukt. dalam Menunjang Konektivitas Pulau di Indones.*, pp. 57–63, 2014.

- [9] WHO, "Mental health policy and service development team Publications produced or distributed by Nations for Mental Health," *WHO Ment. Heal. Policy Serv. Dev.*, p. 77, 2000.
- [10] Occupational Health and Safety Management Systems (OHSAS), *Sistem manajemen keselamatan dan kesehatan kerja • Persyaratan*. 2007.
- [11] R. Akselsson, A. Jacobsson, M. Bötjesson, S. Ek, and A. Enander, "Efficient and effective learning for safety from incidents," *Work*, vol. 41, no. SUPPL.1, pp. 3216–3222, 2012.
- [12] Minister of Manpower and Transmigration of the Republic of Indonesia;, "Peraturan Menteri Tenaga Kerja Dan Transmigrasi Republik Indonesia Nomor: Per - 01/Men/I/2007 Tentang Pedoman Pemberian Penghargaan Keselamatan Dan Kesehatan Kerja (K3) Menteri," Jakarta, 2007, pp. 56–9.
- [13] A. M. Vecchio-Sadus, "Enhancing safety sulture through effective communication," *Saf. Sci.Monit.*, vol. 11, no. 3, pp. 1–9, 2007.
- [14] H. Samuel and N. Wijaya, "Service Quality, Perceived value, Satisfaction, Trust, dan Loyalty pada PT. Kereta Api Indonesia Menurut Penilaian Pelanggan Surabaya," *J. Manaj. Pemasar.*, vol. 4, no. 1, pp. 23–37, 2010.
- [15] Y. Endriastuty and P. R. Adawia, "Analisa Hubungan Antara Tingkat Pendidikan , Pengetahuan Tentang K3 Terhadap Budaya K3 Pada Perusahaan Manufaktur," *J. Ecodemica*, vol. 2, no. 2, pp. 193–201, 2018.