

# Optimizing the Implementation of Occupational Health and Safety (K3) Protection in the Indonesian Mining Industry Based on ANIMATION (Active Monitoring Safety Regulation)

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## Abstract

*This study examines the optimization of the Occupational Health and Safety (K3) protection system in Indonesia's mining sector. This research is normative legal research using secondary data sources through library research based on applications often found in real-life realizations. This research is prescriptive using grammatical interpretation and systematic interpretation of the provisions of laws and regulations relating to workers' protection in the mining sector in Indonesia. The results show that the laws and regulations in Indonesia have not optimally regulated the protection of workers in the mining sector, as evidenced by the high frequency of work accident cases which are always increasing due to less strict OHS supervision and violations that have become a habit that has been accepted as a common practice. This research will comprehensively examine the ideal prototype recommendations regarding OSH protection management based on the ANIMATION (Active Monitoring Safety Regulation) system which is projected to supervise mining industry players (employers and workers) to provide adequate minimum K3 qualifications. This is intended to optimize the improvement of K3 and minimize the risk of work accidents in the mining sector's operational activities in Indonesia.*

Keywords: protection; occupational health and safety (K3); mining; ANIMATION.

## **Introduction**

Indonesia as one of the countries that are currently carrying out massive development in various sectors, such as infrastructure development, increasing Human Resources (HR) and increasing other relevant resources to support the country's development. The use of technology is analogous to a "double-edged knife" where on the one hand it can be used to help meet human needs widely. However, if it is not done correctly, it can harm humans themselves.

Nowadays, the use of technology that is increasingly developing is inevitable, especially in the industrialization era marked by mechanization, electrification, modernization, and the transformation of globalization under the industrial revolution. The industrial revolution encourages the use of machines, installations and other work materials that can pose a risk of work accidents that endanger workers due to industrialization demands. The increasing cases of work accidents are generally caused by work environment factors that do not meet the appropriate occupational health and safety (K3) standards, work operations that tend to be unsafe and the work needs of an increasingly complex company schematic system which is a separate threat to health and safety workers (Tarwaka, 2008).

Technological developments have increased the standard of human living. They can reduce the source of accidents, injuries and stress caused by work. However, advances in technology can also bring new

sources of work stress and injury to workers. High work demands generally can increase the potential danger for workers, especially when they are working. This is generally since existing human resources cannot keep up with the high work demands that can trigger stress when workers are working. This can trigger workers not to comply with the standards for using K3 tools provided by employers.

One of the productive sectors that are near related to K3 is the mining industry sector. Regulations on safety and health in general mining work began in 1930 under the name *Mijn Politie Reglement (MPR)*, a regulation made during the Dutch East Indies government, followed by PPRI No. 19 of 1973 concerning Work Safety Regulation and Supervision in the Mining Sector issued by the Minister of Mining. After studying the considerations of modern technological science regarding the use of mining equipment and in order to expedite development activities, in 1995 it was perfected with the issuance of the Minister of Mines and Energy Decree No. 555 / K / 26 / M.PE / 1995 dated 22 May 1995 concerning General Mining Occupational Safety and Health (Selvy Yovita, 2009).

The government has issued a law on K3 supervision regulations, namely in Law Number 13 of 2003 concerning Manpower which specifically regulates K3 in Law Number 1 of 1970 concerning Work Safety aims to (Suma'mur):

1. Protecting workers for their safety rights in doing work for the welfare of life and increasing work productivity

2. Ensuring the safety of every worker in the workplace
3. Production sources are maintained and used safely and efficiently.

However, in practice, this problem is not yet an essential issue for the company because there tends to be no serious attention from the company and the mining workers themselves. This happens because safety awareness or awareness of K3 is still low. The regulatory policies governing K3 seem "useless" because they are only normative or only explained in-laws and regulations without any real implementation in the field. The awareness of the importance of K3 owned by the majority of mining companies in Indonesia can be said to be still low, which has triggered the creation of a necessary safety behaviour (BBS) in the mining work environment which has led to the rampant level of occupational accidents in mining due to the low level of OHS performance monitoring by the mining company itself.

Based on ILO data (2003), it is found that in Indonesia, the level of achievement of the implementation of OSH performance in companies is still deficient. From this data, it turns out that only about 2% (around 317 units) of companies have implemented K3. Simultaneously, the remaining 98% (around 14,700 units) of companies have not implemented K3 properly. Based on Jamsostek data, that national K3 supervision is still not running optimally. This can be seen from the number of accidents that occurred. Wherein 2003 there were 105,846 accidents, in 2004

there were 95,418 cases, in 2005 there were 96,081 cases. In 2006 there were 70,069, and throughout 2007 there were work accidents. 65,474 incidents. Of course, this figure is still very fantastic and can be used as a benchmark for the achievement of K3 performance (Selvy Yovita, 2009).

To optimize OSH protection in the mining sector through the reflection of laws and regulations, especially in the Law of the Republic of Indonesia Number 13 of 2003 concerning Manpower as the core rule that regulates OSH protection for mining sector business actors, so that it is expected to reduce the high number of work accidents due to lack of safety awareness from both the company and the mining workers. Based on the background description above, the authors are interested in examining the problems of OSH protection in the mining sector in Indonesia with the following problem formulations: Bagaimana realitas kondisi penerapan perlindungan K3 sektor pertambangan di Indonesia dikaitkan dengan peraturan perundang-undangan yang relevan?

1. How is the reality of implementing OSH protection in the mining sector concerning the relevant laws and regulations?
2. How can the ANIMATION system solution be projected to optimize the OSH protection of the mining company sector in Indonesia?

## Literature Review

### *Mining Industry*

Mining is an activity carried out by digging into the ground (earth) to obtain something in mining products.<sup>1</sup> According to Law Number 4 of 2009 concerning Mineral and Coal Mining Article 1 point (1) states "mining is part or all of the stages. Activities in the context of research, management and exploitation of minerals or coal include general investigation, exploration, feasibility studies, construction, mining, processing and refining, transportation and sales, and post-mining activities. From the above understanding, we can conclude that the mining industry is divided into 2, namely the Mineral Mining Industry and the Coal Mining Industry. The mineral industry is mining a collection of minerals in the form of ore or rock, excluding geothermal, oil and gas, and groundwater. Meanwhile, coal mining is meant by the mining of carbon deposits in the earth, including solid bitumen, peat, and asphalt rock (Adrian Sutedi, 2012).

Based on Article 7 of Government Regulation No. 23/2010 concerning the Implementation of Mineral and Coal Mining Business Activities. Mining Business Permits are granted in 2 (two) stages, namely the first stage in the granting of Mining Business Permit Areas (WIUP) and the second stage namely granting Mining Business Permits (IUP). To obtain a Mining Business Permit Area (WIUP), metal mineral mining must go through an auction procedure. Participants who wish to participate in the auction must meet administrative, technical and financial requirements.

### *Occupational Health and Safety*

According to the ILO / WHO (1980), Occupational Safety and Health (K3) promotes and maintains physical, mental and social factors in all workplaces, preventing health problems caused by working conditions, protecting workers and all people from the results. Risks and factors that can interfere with health, placing and maintaining workers in a work environment that is adaptive to physiology and psychology and can adjust work to humans and other humans according to the type of work (Danggur Kondarus, 2006).

In its resolution, the ILO states there are three basic principles regarding occupational safety and health (Danggur Kondarus, 2006):

- a. Work must be in a safe, healthy and safe work environment.
- b. The conditions of work must be suitable for workers.
- c. Work must be something tangible as an individual achievement, the fulfilment of personal needs, and the general public's service.

According to the Law of the Republic of Indonesia Number 1 of 1970 concerning Occupational Safety and Health, it is clear that work safety is an effort to protect workers and other people from potential hazards, which come from machines, planes, work tools. And materials, along with energy. Also protection from hazards in the work environment, nature of work, work methods and production processes. From the K3 law, it is implied that the definition of Occupational Safety and Health in a philosophical manner

is an effort and thought in ensuring the physical or spiritual needs and perfection of humans in general and energy in particular as well as work and culture in order to lead to a just and prosperous society based on Pancasila. Simultaneously, scientific understanding is a science and application of technology to prevent occupational accidents and occupational diseases (Attahir Yusuf, 2002).

Meanwhile, according to Simanjuntak (1994) in Sahab (1997), safety is a condition free from the risk of accident or damage or with a relatively minimal risk below a certain level. Work safety as the primary means of preventing accidents, disabilities, and deaths includes the prevention of accidents and the protection of workers from possible accidents resulting from unsafe and unsanitary working conditions. Efforts to maintain workers' safety and the workplace need to be done through a safety program sponsored by management (A.D. Dahlawy, 2008).

From some of the descriptions above, it can be said that several aspects become the basis for implementing K3 according to Wirahadikusumah, namely (R.D. Wirahadikusumah, 2007):

- a. Philosophical aspects where human rights are the basis for thinking about the importance of occupational safety and health. Humans have the same right to life as well as safety and health.
- b. The legal aspect where K3 cannot be implemented in real terms without the

existence of the rules used; for this reason, there are regulations at various levels that regulate K3.

- c. The economic aspect is that by implementing K3, the accident rate will decrease so that compensation for accidents also decreases. Besides, it can increase work productivity so that it can increase production results.

### *Protection*

In this research, protection is legal protection based on a surveillance system with active monitoring security regulations in the work environment in mineral and coal mining. Indonesia is a country that has abundant natural resource potential, one of which is the mineral and coal mining sector. This mineral and coal mining sector spread to various parts of Indonesia. This is certainly a potential that the Indonesian nation itself must exploit. Utilization of the potential of mineral and coal mining natural resources, of course in its management must be accompanied by caution in using it. Excellent human resources are essential in the utilization of this mineral and coal mine (Adrian Sutedi, 2012).

In the mining sector, workers are guaranteed legal protection, which is to ensure the workers' welfare. The legal function here that is meant to guarantee workers' welfare is imperative law (winged Recht or coercive law) and facultative law (rangeland Recht or aanvulend Recht or other law).

According to Salim H.S, imperative law is a law that must be obeyed absolutely. In contrast, facultative law is a law that can be set aside (usually according to an agreement).

The point is to provide legal protection to mining workers to carry out their activities, provide a sense of security, and provide legal certainty for their work based on a work agreement between employees and companies and serve to protect employee rights (Selvy Yovita, 2009).

Human resources development as one of the efforts in realizing national development is directed at regulating, fostering and supervising all activities related to human resources so that order can be maintained to achieve justice.

The regulation, guidance and supervision carried out based on the prevailing laws and regulations in the staffing sector must be adequate and under the increasingly rapid development pace of development to anticipate demands for human resources planning, fostering industrial relations and improving labour protection. Legislation governs human resources, namely Law Number. 13 of 2003 in which there are various kinds of labour arrangements in the form of protection, welfare, and guarantees for workers (Selvy Yovita, 2009).

### **Research Method**

Legal research, in general, can be categorized into doctrinal research and non-doctrinal research. In this study, researchers used a type of doctrinal research. Doctrinal research is legal research which is not

descriptive like social and natural sciences. Normative legal research examines scientific library materials or library research, which includes primary legal materials, secondary legal materials, and tertiary legal materials (Peter Mahmud Marzuki, 2008).

Normative legal research includes research on positive law inventories, legal principles, clinical legal research, statutory systematics, legal history, and comparative law (Peter Mahmud Marzuki, 2008). The research conducted by the author focuses on a literature study and legal doctrines, namely the views or teachings of legal experts related to the field of study studied, namely related to the protection of K3 in the mining sector in Indonesia.

In this research, the research sources used include statutory regulations, journals, opinions and teachings of legal experts, books, and conference articles related to the protection of OSH, labour law, and K3, the reality of supervision conditions K3 protection in the mining industry sector.

### **Result and Discussion**

#### *The Reality of the Conditions of the Application of K3 Protection in the Mining Sector in Indonesia Associated with the Relevant Legislation*

It can be said that OSH protection in the mining industry sector in Indonesia is still not optimal; this is indicated by the many cases of work accidents that occur in mining operational activities in Indonesia. This is generally due to

the lack of awareness of employers and mine workers themselves. The lack of safety awareness is the main factor causing the high number of mining accidents in Indonesia.

According to the Social Security Administration (BPJS), the detik.com news site revealed that work accident rates are always increasing from year to year. For 2017 alone, there were 123 thousand cases recorded in the mining sector in Indonesia (Detik Finance, 2018).

The direct cause of an accident is the trigger that immediately causes the accident, for example, slipping due to spilt oil on the floor. Fundamental causes contribute to the incident, for example, in the case of a slip. There is a leak or spill of material, bad lighting conditions, rush or lack of supervision in the work environment. The direct cause is just a symptom that something is not right in the organization driving unsafe conditions.

Therefore, in the concept of accident prevention, the existence of direct causes must be evaluated more deeply to determine the essential factors that contribute to accidents. Besides the human factor, there are other factors, namely the management system's imbalance such as planning, monitoring, implementing, monitoring and coaching. Thus the causes of accidents are not always single but multi-causal. The handling must be planned and comprehensive, which encourages the birth of the concept of occupational safety and health management system.

Currently, the regulation regarding OSH in the mining industry sector can be said to be not

optimal, this is indicated by the number of regulations that are only normative without any clear implementation in the field. Therefore, in general, it can be said that the reality of the OSH protection condition that exists in the mining industry sector in Indonesia today is still classified as very concerning because there is no real and active supervision in OSH protection by mining entrepreneurs to mining workers.

*Using the ANIMATION System as a projection for the completion of the system in Optimizing K3 Protection in the Mining Sector.*

According to the Law of the Republic of Indonesia, Number 13 the Year 2003 Article 35 paragraph 3 "Employers as referred to in paragraph (1) in employing workers are obliged to provide protection which includes welfare, safety and health, both mental and physical workers." From the Law of the Republic of Indonesia Number 13 of 2003, we can see that protection is divided into three types, namely welfare, safety, and health, both mental and physical.

Protection of welfare in mining work which is an accident-prone job. So in addition to insurance against accidents and health, it is necessary to guarantee welfare as described in the Law of the Republic of Indonesia Number 13 of 2003 in article 100, namely:

1. To improve welfare for workers/labourers and their families, entrepreneurs are required to provide welfare

facilities.

2. The provision of welfare facilities as referred to in paragraph (1) shall be carried out by taking into account the needs of the workers/labourers and the size of the company's capacity.
3. Provisions regarding the types and criteria of welfare facilities under the needs of workers / labour and the size of the company's capacity as referred to in paragraph (1) and paragraph (2), shall be regulated by a Government Regulation.

One of the most important things to protect workers in carrying out their work in the mining area is the need for facilities in Personal Protective Equipment (PPE) and has been tested and meets the Indonesian National Standard (SNI). Among them are equipment such as:

1. Head protection tool (safety helmet)
2. Ear protection devices (earplugs and earmuffs)
3. Eye protection tools (goggles)
4. Foot protection tools (safety shoes)
5. Body protection (life jackets and raincoats).

The facilities are not only adequate, but the discipline of employees wearing PPE is also needed by their respective supervisors. This is done to make it easier to observe and approach emotionally so that employees' use of PPE does not feel only like an obligation but considers it a need to get a sense of security and safety at work.

One of the efforts to protect K3 in the mining industry is the placement of workers. Under what is

regulated in the Law of the Republic of Indonesia Number 13 of 2003 in article 32 paragraph 2, it is explained that the placement of workers is directed at placing workers in the right positions according to their expertise, skills, talents, interests, and abilities with due regard for dignity. Human rights and legal protection. In the field's direct application, it is mandatory to have the right division/ placement of labour because labour division can reduce the number of accidents in the mining industry.

The work safety management system starts with carrying out hazard identification to determine the factors and potential hazards that exist, the results of which will be used as material for analysis. In this case, it begins with making a standard operational procedure (SOP).

Then as an analysis step, it is necessary to carry out observation and inspection. After analyzing the next action, the last thing that needs to be done is a risk evaluation to assess the risk level, controlling or controlling the risk/control. This risk control activity is characterized by providing detection tools, provision of PPE, installation of signs and the appointment of personnel responsible as supervisors.

After risk control is carried out, the supervisory action is to monitor and review hazards or risks. ANIMATION or Active Monitoring Safety Regulation, a monitoring and protection system with active safety regulations that refers to solutions in optimizing OSH protection for mining workers in Indonesia's mining companies. As a consequence



of the issuance of a Mining Business Permit (IUP), the next step is to carry out supervision.

Supervision is one of the elements in management activities. Principally, supervision is carried out as a preventive measure of whether activities are carried out under existing regulations. Principally, the objective of supervising mining business management is that IUP holders are more focused on carrying out activities in conjunction with the mining business to not deviate from the orders and prohibitions stipulated in the permit.

In theory, George R. Terry argues that supervision is intended to determine what has been achieved, evaluate and implement corrective actions if necessary, to ensure the results are under the plan.

Relevant to this opinion, supervision is necessary for the management of the mining business under the principle of the objective of supervision, namely not to deviate from the orders and prohibitions stipulated in the permit.

Therefore, as part of the management function, planning becomes increasingly essential for the supervisory task's effectiveness and as the realization of the task of law enforcement as mandated by laws and regulations. The supervisory activity's initial planning determines the success or failure of a series of supervisory tasks.

Although the planning activities are not regulated in a limitative manner in PP 55 of 2010 concerning P4UPMB and the Minister of Mining and Energy No. 2555.K of 1993 concerning Implementing Mining Inspections (PIT) in General Mining

Businesses, in reality, these stages should be implemented in the framework of the effectiveness of the supervisory task.

Not being regulated in a limitative manner regarding this matter will impact the implementation of the rules at the practical level. Therefore, normatively, improvements are still needed. Planning is necessary to initiate supervision to realize the legal will containing orders and prohibitions in the mining sector.

In Kutai Kartanegara Regency, East Kalimantan Province, one of the missions that elaborate the vision of the Kutai Kartanegara Regency Mining and Energy Service is planning and evaluation programs in the mining sector. As a realization of this mission, and in conjunction with mining supervision duties, a strategy is implemented through planning.

Apart from the mining entrepreneur's planning, the task of supervising mining activities that PIT has carried out is carried out through the planning stage. According to the plan, before the supervision was carried out, several things that had been done were as follows. First, providing guidelines and standards for mining business management; second, providing guidance, supervision and consultation; and third, education and training. Furthermore, supervision is carried out through the evaluation of work plans and the implementation of mining business activities and direct inspection of mining business locations.

Evaluation of the work plan and the implementation of mining business activities are carried out

through reports made every three months, besides regular direct site inspections, as an exception, if a case occurs. The facts above show that in sectoral agencies, the planning strategy related to environmental management supervision as a realization of Mining Business Permits (IUP) has been carried out. In reality, it has not been implemented in an integrated manner between sectoral agencies.

This fact also proves that supervision planning is carried out individually by each sectoral agency, namely between the ESDM and BLHD offices. Ideally, planning that is carried out in an integrated manner essentially plays an important role and determines whether or not supervision is optimal.

Therefore, through integrated planning, mutual commitment and common perception are needed, so that it is hoped that the entire series of supervision implementation can be carried out according to the targets set in an integrated manner, so that administrative law enforcement efforts can be carried out. Through integrated supervision, it is hoped that the implementation will not deviate from the nature and essence of the objective of supervision.

Likewise, changes in legislation are not immediately followed by changes in the system, because they are related to the absence of implementing regulations. For example, currently the Mineral and Coal Mining Law (UUPMB) is in effect, which is not yet effective in the field.

In theory, according to Ridwan, one of the motives for monitoring is coordination. The reality based on

the interview results above is irrelevant to the opinion expressed by Ridwan. Coordination should have started at the planning stage, so that implementation is expected to support the realization of administrative law enforcement. Through supervision, it is hoped that a balance will be maintained between mining management and the preservation of environmental functions, so that it is hoped that it can realize environmental friendly mining management.

The implementation of mining in an environmentally sound manner will support the implementation of development concepts for the present and the future as expected through international conferences that have produced various international declarations. From all these things, ANIMATION or Active Monitoring Safety Regulation is the answer to all the problems that exist today. Because the system of the ANIMATION or Active Monitoring Safety Regulation provides assurance of active protection and supervision through existing regulations that refer to the occupational safety and health of mining workers in Indonesia. So that mining industry companies in Indonesia in giving instructions or orders to workers already have an active system based on regulations that refer to occupational safety and health in the form of protection and supervision.

## **Conclusion**

The reality of the implementation of OSH protection in mining companies in Indonesia is related to the laws and regulations in

Indonesia which are classified as less than optimal because they are still only normative without any real implementation in the field due to lack of OHS protection supervision. ANIMATION is a system solution for system solutions that can optimize OSH protection in the mining sector concerning laws and regulations in Indonesia. And the suggestion **are** there must be an improvement in the OSH protection system in the laws and regulations on Manpower. It is hoped that it can provide optimal OSH protection in the mining sector. Optimization of the ANIMATION system is projected to be able to be used to encourage real and active K3 protection in the mining industry sector.

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