

## Evaluation of Mining Safety Management System Implementation in PT. ANTAM UBPB Sultra

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**Abstract:** occupational safety and health in the mining sector, is an important aspect in mining business activities because it has a high risk of occupational accidents or occupational diseases. This research aims to examine the success rate of SMKP that has been implemented by companies at PT. ANTAM. This type of research is a survey with a quantitative approach. The research sample consisted of representatives from 26 work units with a total of 613 employees. Data were collected using field observations, questionnaires, and guided interviews. Data were analyzed using quantitative descriptive with percentages. The results of internal audit and questionnaire as a whole, it was found that the success of implementing SMKP was 89%. Evaluation Results of the Application of Safety Management Systems at PT. ANTAM has been implemented in line with the regulation of the Minister of Energy and Mineral Resources Decree Number 26 of 2018.

**Keywords:** evaluation, mining, safety management system.

**Abstrak:** keselamatan dan kesehatan kerja bidang pertambangan merupakan aspek penting pada kegiatan usaha pertambangan dikarenakan memiliki risiko tinggi terjadinya kecelakaan kerja ataupun penyakit akibat kerja. Penelitian ini bertujuan mengkaji tingkat keberhasilan SMKP yang telah diterapkan oleh perusahaan di PT. ANTAM. Jenis penelitian ini survey dengan pendekatan kuantitatif. Sampel penelitian sebanyak perwakilan dari 26 satuan kerja dengan jumlah 613 karyawan. Data dikumpulkan menggunakan Obsevasi lapangan, menyebar angket, dan wawancara terpimpin. Data dianalisis menggunakan deskriptif kuantitatif dengan persentase. Berdasarkan hasil Audit Internal dan kuesioner secara keseluruhan diperoleh capaian keberhasilan penerapan SMKP sebesar 89 %. Hasil Evaluasi Penerapan Sistem Manajemen Keselamatan di PT. ANTAM sudah dilaksanakan sesuai dengan regulasi Permen ESDM N0. 26 Tahun 2018.

**Kata Kunci:** evaluasi, pertambangan, manajemen keselamatan kerja.

## INTRODUCTION

The mining companies and their supporting service companies are required to implement the mineral and coal mining Safety Management System (SMS) since the issuance of the regulation of Minister of Energy and Mineral Resources Number (26, 2018) and the Decree of the Minister of Energy and Mineral Resources Number (K/30/MEM/, 2018). Mineral and coal mining activities have certain specificities because they have a continuous process, require special equipment, and have high and dynamic safety-health hazards and risks. Safety aspect in the mining has become a global requirement and is useful to ensure the creation of the occupational safety and health system. The elements involved include: management, workers, and trade unions to prevent and reduce occupational accidents and occupational diseases, create a comfortable, efficient and productive workplace, and increase the company's image and competitiveness. According to (Suwarto, 2017) human resources are the dominant variable in work.

The preparation of the mining SMS began with the issuance of Government Regulation with the number of (55, 2010) concerning guidance and supervision of the mineral and coal mining business management implementation. This regulation was issued as the implementer of Law with the number of (4, 2009) concerning mineral and coal mining. Government Regulation with the number of (55, 2010) article 27 regulates the supervision of occupational safety and health and work safety in mining operations. According to (Pramadhan et al., 2019) laws and regulations bind companies to implement workplace safety.

The nomenclature of the mining SMS itself is formed as a synchronization of the issuance of Government Regulation with the number of (50, 2012) concerning the Implementation of the Occupational Safety and Health Management System (OSHMS) which is a derivative of Law Number (13, 2003) concerning Manpower. Government Regulation Number (50, 2012) regulates national policies on the occupational safety and health management system as company guidelines. Efforts to accommodate specificities in several business sectors Government Regulation Number (50, 2012), Article 4 paragraph (2) stipulates that business sector agencies can develop guidelines for implementing an OSHMS according to their needs based on the laws provisions and the regulations. According to (Setianingrum and Susilowati, 2020) the mineral and coal mining SMS is regulated by the government and ministerial regulations.

The mining sector is one of the business sectors that given specificity to develop guidelines for the OSHMS. Guidelines for Occupational Safety and Health Management Systems in mining are further developed into the term as Mining SMSs. The Mineral and Coal Mining SMS is part of the company's overall management system in the context of controlling mining safety risks, which consists of mining occupational safety and health, and mining operation safety. According to (Astika and Pulungan, 2017) the safety, the health of workers and the security of mining operations are important points in mining work safety.

Mining Occupational Safety and Health are all activities to ensure and protect mine workers to be safe and healthy through efforts to manage workplace safety, occupational health, work environment, and occupational safety and health management systems.

Mining Operation Safety is all activities to guarantee and protect safe, efficient, and productive mining operations through efforts, including system management and implementation of maintenance/maintenance of facilities, infrastructure, mining; installation safety; feasibility of mining infrastructure, installation and equipment, competency of technical personnel, and evaluation of reports on the results of technical studies. These two things are interrelated in the process of implementing mining safety. According to (Amalina and Larasati, 2020) work safety management can prevent mining work accidents.

The aim of the application of the Mineral and Coal Mining SMS, namely: first, to improve the effectiveness of a planned, measurable, structured, and integrated mining safety. Second, prevent mining accidents, occupational diseases, and dangerous incidents. Third, creating safe, efficient, and productive mining operations. Fourth, creating a safe, healthy, comfortable, and efficient workplace to increase productivity. The purpose of this article is to find out how the Application of the Mining SMS in PT Antam Tbk UBPN Sultra. The second objective is to determine the level of occupational health and safety performance with the issuance of Permen ESDM Number (26, 2018) and Minister of Energy and Mineral Resources Decree with the number of (K/30/MEM/, 2018).

## THEORITICAL REVIEW

**Application of the Mining SMS.** The Indonesian mining world finally has a Mining SMS with the issuance of the Minister of Energy and Mineral Resources Regulation Number (38, 2014) concerning the Application of the Mining SMS. This regulation has been revised by the Minister of Energy and Mineral Resources Regulation number (26, 2018) and the Ministerial Decree number (K/30/MEM/, 2018). The existence of SMKMP Mineral and Coal makes all of the mining companies and their supporting service companies obliged to implement this regulation. According to (Awaluddin et al., 2020) PT. Niat Karya is one of the companies that applied mining safety because it follows existing regulations about safety in Indonesia.

The Mining SMS is the system of management that is part of the company's management system in order to control mining safety risks which consist of mining occupational safety and health and mining operation safety. The mining companies that are obliged to implement the Mining SMS are the holders of IUP, IUPK, IUP. Production Operations specifically for processing or refining, KK and PKP2B.

The company is obliged to carry out an internal audit at least once a year, and if necessary KAIT can request an external audit from an accredited body. The reports in the internal and external audits result must be reported to KAIT no later than 14 working days from the completion of the audit. There are seven elements contained in the Mining SMS, namely: policy, planning, organization and personnel, implementation of evaluation and follow up, documentation management review.

Companies that do not implement the Mining SMS will be subject to sanctions in form of written warning sanctions, temporary suspension of part or all of their operational activities, and revocation of business licenses. Company elements in the management of K3 mining consist of Head of Mining Engineering, Organization and Personnel of K3, K3 Program, Budget and Costs, and K3 Documents and reports. According to (Chrystabel &

Hapsari, 2020; Maudica et al., 2020) internal audits are carried out and reported to determine the achievement of work safety implementation.

**Occupational Health and SMS.** Mining Operation Safety Supervision is carried out to create safe and secure mining operations. The scope of Mining Operation Safety includes Evaluation of the results of the study report, fulfillment of installation standardization, installation security, the feasibility of mining facilities, infrastructure and equipment installation; Competency of technical personnel. The table 1 for assessing the level of achievement of internal audit compliance according to the Minister of Energy and Mineral Resources Number (38, 2014) is as follows:

**Table 1.** Percentage of Compliance Level of Mining Safety Management Audit System

Nu.	Level	Description
1	Gold	Level of Achievement Fulfillment $\geq 90\%$ and no major findings
2	Silver	Level of Achievement Fulfillment $80\% < 90\%$ and no major findings
3	Bronze	Level of Achievement Fulfillment $70\% < 80\%$ and no major findings
4	SK Audit	Level of Achievement Fulfillment $< 70\%$
5	Number SK Audit	No major findings more than 30 days

Source: the Minister of Energy and Mineral Resources Number (38, 2014)

**Inhibiting Factors and the Success of the Occupational Safety and Health Management System.** The factors inhibiting the occupational health and SMS are divided into certain points. These points are there no requirements from the consumers regarding proof of the implementation of an occupational health and SMS. The economic crisis impact can also hinder the creation of a health and SMS. There are no consequences for companies that delay and refuse the implementation of the audit of the occupational health and SMS. Company less readiness due to company ignorance and audit fees that are considered burdensome to the company. The coordination frame for the implementation of audits of other technical departments has not yet been realized (Siregar et al., 2019).

The success factors of implementing an occupational health and SMS include the implementation of several management systems that support the implementation of an occupational health and SMS. High commitment to occupational health and safety (OHS) from top management or the parent company, conducting comparative studies, the presence of experts. Department or division that specializes in OHS. Awards in the field of occupational health and health have been obtained from foreign institutions (Siregar et al., 2019).

Another success factor is that a safety committee that plays an active role in the implementation of OHS has been established. Demands from consumers to companies to implement a certified work health and SMS. The acceleration of a company in its sector is because other companies have successfully implemented an occupational health and SMS. Coaching efforts regarding occupational health and SMSs either from professional associations or from company area coaches (Siregar et al., 2019).

**Application of Occupational Health and SMSs.** OHSAS has a health and SMS model listed in OHSAS 18001: 2007 regarding occupational health and SMS standards. The OHSAS standard is based on the Plan-Do-Check-Act (PDCA) methodology. Plan or planning, namely determining the objectives and processes required to produce results in accordance with the company's occupational health and health policy. Do or implementation, namely implementing the planned process (Herlinawati and Zulfikar, 2020). Check or inspection, which is to monitor and assess the implementation of the process based on OHS policies, objectives, standards, and other requirements, and report the results. An act or taking action, namely taking action to improve health and safety performance continuously. The DEPNAKER policy in the field of K3 recommends that a preventive approach from the K3 aspect can be started from the selection of technology and good implementation procedures. According to (Kamdhari & Estralita, 2018) PDCA is a continuous and continuous improvement effort to maintain quality.

National Occupational Health and SMS Implementation Standards National occupational health and SMS standards have implementation steps that are in line with OHSAS. The Government Regulation with the number 50 of 2012 that the occupational health and SMS includes the establishment of policies. The OHS policy is made by the company which contains the company's vision, goals, commitment, and determination to implement the policy, as well as a work program covering the company's overall activities. OHS plans are prepared and determined by employers which refer to the designed OHS policies (Herlinawati and Zulfikar, 2020). Implementation of an OHS plan that has been adjusted according to the plan that has been designed. Monitoring and evaluation of OHS performance are carried out through inspection, testing, measurement, and internal audit of the occupational health and SMS. Monitoring results are reported and used to take corrective action. Review and improvement of OHS performance are carried out to ensure the suitability and effectiveness of the implementation of the occupational health and SMS. The results of the review are used to make improvements and improve performance (Kamdhari and Estralita, 2018).

Assessment of the Implementation of Occupational Health and SMSs according to Government Regulation Number (50, 2012) includes two elements. These elements include building and ensuring the implementation of commitments, making and documenting OHS plans, controlling the design, and reviewing contracts. Other elements are document control, product purchasing, and control, work security based on an occupational health and SMS (Kamdhari and Estralita, 2018).

**Occupational Health and Safety (OHS).** OHS is a thought and effort to ensure the integrity and perfection of both the physical and spiritual workforce in particular, and humans in general, the work and culture of a just and prosperous society (Mangkunegara, 2011). Work safety is a series of efforts to create a safe and peaceful work atmosphere for employees who work at the company concerned (Srisantyorini and Safitriana, 2020). The aim of occupational safety and health in every employee is guaranteed occupational safety and health both physically, socially, and psychologically, every work equipment. The equipment is used as selectively as possible, all production results are maintained for safety, guaranteed maintenance and improvement of nutritional health employees, increase enthusiasm, work harmony, and work participation. Avoid health problems caused by the

environment or working conditions so that every employee feels safe and protected at work (Mangkunegara, 2011).

**Personal Protective Equipment.** Personal protective equipment is a tool that can protect someone whose function is to isolate part or all of the body from potential hazards in the workplace (Suma'mur, 2013). PPE has a type and function. Head protective equipment, which serves to protect the head from collisions, stumbling, falling, or being hit by sharp objects or hard objects that float or slide in the air, are exposed to heat radiation, chemical sparks, fire, and extreme temperatures. Types of head protection are a safety helmet, a hat or head covering, and a hair cover or guard. Eye and face protection, which functions to protect the face from exposure to hazardous chemicals, splashes of small objects, heat, light rays, and blows of hard objects or sharp objects. Types of Eye and face protection are spectacles, face shields, diving masks, and full-face masks. Ear protection, which serves to protect hearing aids against noise and pressure. Types of ear protection consist of earplugs and ear muffs (Suma'mur, 2013).

**Occupational Safety and Health Accident Statistics (OHSAS).** In general, the OHSAS that are widely used by industry are, first, the frequency rate is the number of lost day accidents in one million working hours during a certain period (Monthly, 3 Months, 6 Months, or Annually). Second, the Severity Rate, which is the number of days lost due to lost accidents in one million working hours during a certain period. Third, the number of workers is the number of workers registered during a certain period. Fourth, the number of lost day accidents is the number of lost day accidents that occurred during a certain period. According to (Ningsih and Ferijani, 2020) accident statistics serve as guidelines for companies to improve along with efforts to compare with other companies.

Fifth, the number of first aid accidents is the number of first aid accidents that occur during a certain period. Sixth, the accidents of property damage number is the accidents of property damage number during a certain period. Seventh, the number of near-miss events is the number of near-miss events that occur during a certain period. Eighth, the number of unsafe conditions and actions is the number of findings of unsafe conditions and actions that occurred during a certain period.

**Definition of Job Safety Analysis and SOP.** Job safety analysis (JSA) is the technique of safety management that focuses on hazard identification and hazard control associated with a series of work or tasks to be performed, where this JSA focuses on the relationship between workers, tasks or jobs, equipment, and work environment. JSA is useful for identifying and analyzing hazards in a job so that hazards in each type of work can be prevented appropriately and effectively. The JSA can also help workers understand their job better in particular to understand the potential hazards that exist and can be directly involved in developing accident prevention procedures. According to (Nurkholis and Adriansyah, 2017) JSA is a study to reduce the impact of a hazardous incident on a job in a certain company.

## METHODS

This type of research is survey with a quantitative approach. Research locations at PT. Antam Tbk UBPN Southeast Sulawesi at three locations, namely: Main Office research was carried out for five working days, Refinery and Casting research was carried out for nine working days, and Pomalaa Mining in the Central Mine section was carried out for five working days. The research sample consisted of representatives from 26 work units as much as 50% plus one with a total of 613 employees.

The research instrument is in the form of a closed direct questionnaire. The rating scale used is a Likert scale with an interval between one and five with the categories strongly agree, agree, doubt, disagree, and strongly disagree. The questionnaire contains a statement of the elements and sub-elements of the Application of the Mining SMS, the planning stages of occupational safety and health, mining operation safety, monitoring, and evaluation.

The research method of collecting data uses field observations with direct observation at the location in general, the Health, Safety, and Environment Work Unit. The next way is by distributing questionnaires and guided interviews by making a list of questions that will be answered by the respondent. Data were analyzed using quantitative descriptive with percentages. According to (Damhuri et al., 2018; Sejati et al., 2020) percentage is one of the best option that can indicate the findings of the phenomena studied in quantitative research.

## RESULTS

The data on the availability of PPE is complete, in the form of safety helmets, safety glass, earplugs, and earmuffs, safety respirator dust must, safety-aluminized suits, safety gloves, and safety shoes. The number of PPE in refinery and casting and mining is always more than the number of employees, especially the main office is below the number of employees because of the administrative focus.

Questionnaire answer data from 613 sample respondents obtained data that 70 employees strongly agree, 40 employees agree, 15 employees are doubtful, 5 employees disagree, and no one strongly disagrees. From the results of the data above, it can be seen that 85% of the respondents strongly agree that the Application of the Mining SMS at PT. Antam Tbk. UBPN Sultra is following the Regulation of the Minister of Energy and Mineral Resources with the number of (26, 2018).

Value data of sub-elements and weight of sub-element values based on the results of the application of the Mining SMS based on an internal audit of PT. ANTAM UBPN Sultra as follows.

**Table 2.** Resume of Audit Results of the Implementation of SMKPT.Antam Tbk.UBPN Sultra

Criteria	Maximum Value			Audit Result	
	Elemen Value	Sub-Elemen Value	Sub-sub Elemen Value	Sum of Sub-Elemen Value	Weight Sub-Elemen Value
Policy	200	34	0	200	188
Plan	200	234	0	200	187
Organization and Personal	150	180	0	150	119
Implementation	200	226	0	200	176
Monitoring, Evaluation, and Follow Up	150	202	0	150	142
Documentation	50	68	0	50	40
Management Review and Performance Improvement	50	30	0	50	38

Source: Internal Audit Unit Data PT. Antam Tbk. UBPN Sultra 2018

Audit data weight value and the percentage of success of the seven elements in SMKPT Mineral and Coal at PT. Antam Tbk. UBPN Southeast Sulawesi in 2018 as in Table 3 below:

**Table 3.** Presentase Data The Successful Implementation of SMKPT Audit Results

Criteria	Maximum Weight Value	Audit Weight Value	Success Presentase
Policy	200	188	94%
Plan	200	187	94%
Organization and Personal	150	119	79%
Implementation	200	176	88%
Monitoring, Evaluation, and Follow Up	150	142	95%
Documentation	50	40	80%
Management Review and Performance Improvement	50	38	76%
Sum of Audit Weight Value	1000	890	89%

Source: Audit Internal Data PT. Antam Tbk. UBPN Sultra 2018

Based on the results of SMKPT Internal Audit Data at PT. Antam Tbk. UBPN Sultra which was held in July 2018 by following the Guidelines for the Application of the Mineral and Coal Mining SMS as referred to in attachment IV of the Minister of Energy and Mineral Resources with the number of (K/30/MEM/, 2018), the level of achievement of SMKPT Fulfillment at PT. Antam Tbk. UBPN Southeast Sulawesi in 2018 is 89% and there are no major findings (silver category).

Observation data and documentation of OHS and safety of mining operations indicate the implementation, monitoring, and evaluation of K3. Data on mining accidents, as well as data on the causes of mining accidents, both direct and indirect and direct causes of accidents, unsafe conditions, and the basic causes of accidents, are work factors, personal factors. The data on Work Accident Recapitulation in all Work units of PT. Antam Tbk. UPBN Southeast Sulawesi from 2018 to August 2019 found only 3 cases in the mild category in 2018 and no cases in 2019. FR Cumm 2018 0.04. The 3 cases were being pinched, dropped, and splashed by the material. The immediate causes of unsafe conditions are inadequate to support tools, damaged work equipment, and piles of slag material on the lounders.

Accidents causing factors in unsafe actions and unsafe conditions. Unsafe actions Not wearing masks at work, especially in places such as finishing production, and not wearing gloves or long sleeves when working at finishing production. Unsafe conditions there is an APAR sticker but there is no APAR around the sticker, for example in the Rotary Dryer 4, the motorbike is parked in the factory building area, and dusty in the factory and mining area.

Fire prevention is the first step that must be taken to deal with fires as early as possible by being aware of or being aware of the factors that cause the occurrence of fires and taking steps to prevent these possibilities from becoming a reality. Under the Decree of the Minister of Employment of the Republic of Indonesia with the number of KEP (186/MEN/, 1999) regarding fire fighting units in the workplace, in Chapter I Article 2 paragraph 1 it is explained that "Managers or companies are required to prevent, reduce and extinguish fires, fire control training at the workplace".

Fire prevention efforts, such as the decree of the Indonesian Minister of Employment with the number of KEP. (186/MEN/, 1999) with fire prevention facilities, the first is a light fire extinguisher according to the Republic of Indonesia's Minister of Manpower and Transmigration Regulation with the number of (04/MEN/, 1980). Second, heavy fire extinguishers are following the Regulation of the Minister of Health of the Republic of Indonesia with the number of (48, 2016). Third, Smoke Detector and Heat Detector. Fourth, 3 Fire Trucks and 1 Ambulance Rescue unit.

General Guidelines for Safety Signs, the colors of safety signs are shown in the following table:

**Table 4.** The Colors of Safety Signs

Savety Color	Contras (Symbol or letter)	Meaning
Red	200	188
Yellow	200	187
Green	150	119
Blue	200	176
White	150	142

Source: HSE PT. Antam Tbk. UPBN Sultra 2019

General Guidelines for geometric shapes of safety signs are shown in the following table:

**Table 5.** Geometric Shapes of Safety Signs

Geometric Shapes of Safety Sign	Meaning (Group of Sign)	Description
	200	188
	200	187
	150	119

Source: HSE PT. Antam Tbk. UPBN Sultra 2019

Personal protective equipment (PPE) that is often used in the smelting, processing, and refining work areas is the safety helmet type ST 118-EM2 Safety Helmet, Safety Glass with the type of Safety Spectacles, Safety Goggles, and Tapping Glasses. Earplugs with sound intensity reduction up to 25-30 dB and Ear Muff can reduce sound intensity by up to 40-50 dB. Ear-Muff consists of a Head Band and Ear Cup. Dust Mist Shigematsu Respirator. Aluminized Suit, Safety Gloves, Catton Gloves, Leather Gloves, Rubber Gloves, Electrical Gloves, and Safety Gloves MT 21. Safety-shoes.

## DISCUSSION

Based on the results of previous research regarding the analysis of the mining SMS implementation of PT. Antam (Persero) Tbk Sultra regarding accidents that occurred in the nickel processing plant area in 2016 there were 9 cases of accidents based on accidents that occurred due to unsafe actions and unsafe conditions.

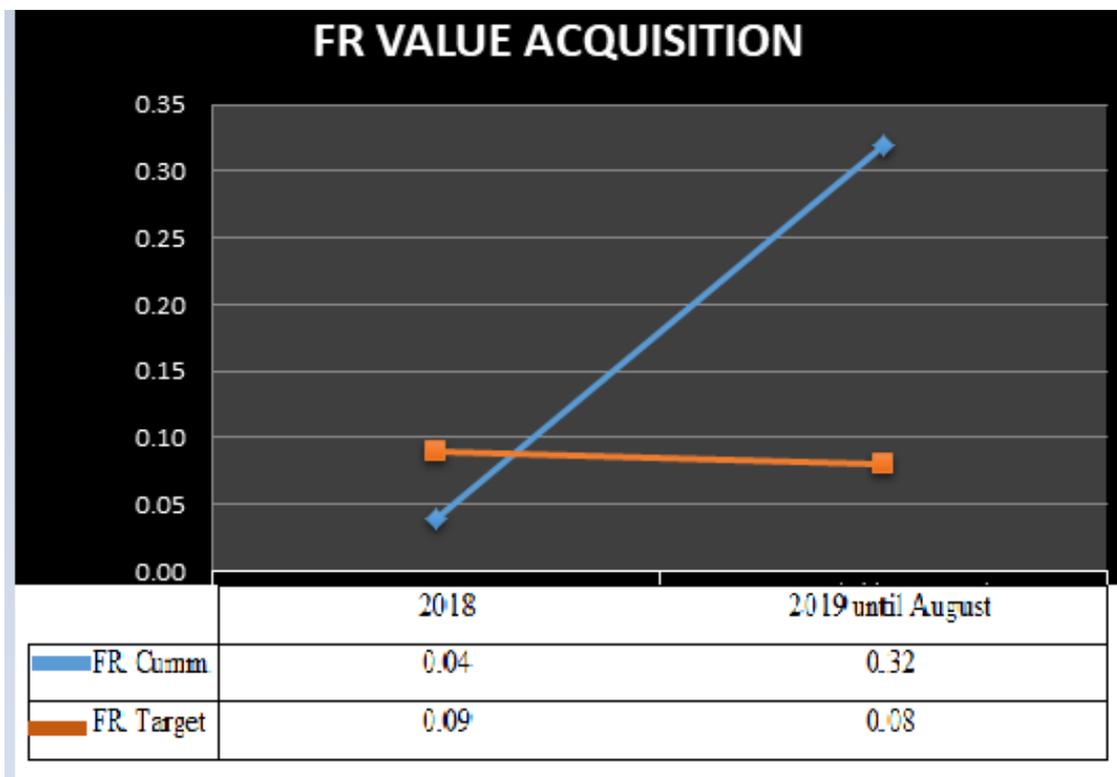
Mineral and Coal Mining SMS Part of the Company's overall management system in the context of controlling mining safety risks, which consists of mining occupational safety and health, and mining operation safety. Companies that do not apply there are Administrative Sanctions regulated in the Minister of Energy and Mineral Resources Regulation Number (26, 2018) concerning the Mineral and Coal Mining SMS from written warnings, temporary suspension of part or all of the activities imposed by DJW, to the revocation of IUP, IUPK, Special OP IUP, IUJP, SKT. According to (Kusuma & Darmastuti, 2011) work safety protects workers and they are more productive.

The Mineral and Coal Mining SMS which consists of Mining Occupational Safety and Health (K3) and Mining Operation Safety (KO), is implemented by holders of IUP exploration, IUPK exploration, IUP production operation, IUPK production operation, IUP special operation for processing and/or refining, and mining service companies. The implementation of SMKP Mineral and Coal consists of the following elements: policy, planning, organization and personnel, implementation, monitoring, evaluation, follow up, documentation, and also management review and performance improvement. According to (Berliana and Widowati, 2019) Safety and security are one of the assessment components

in body accreditation, in this case, for example, hospitals. According to (Apriandi et al., 2015) every element in the work safety system is important.

Implementation of Mining SMSs at Mine Locations Based on Permen ESDM Number (26, 2018), SMKPK focuses on three things, namely safety, health, and mining operations. According to (Awaluddin et al., 2020) mining operations have personal protective equipment instruments and standard operating procedures.

The data on mining accidents in the form of falling, being crushed, falling objects, and being hit is one of the most accidents and can result in serious injury to workers. One worker fell because of being knocked over from an oil spill at the Mechanical Maintenance work units, one worker was caught in the Refinery work unit, and the other collided with the De-sulfurization tool at the Casting work unit. In 2018 there was an accident which was the direct cause of unsafe conditions which were caused due to inadequate support tools, damaged work equipment, and piles of slag material in excessive lounders located in the Refinery and Casting and Smelting Work Unit. In 2018 there have been three mining accidents, namely minor accidents, while from 2019 to August there have been no accidents, whether minor, serious, or fatal. According to (Kristiawan & Abdullah, 2020) accidents are risks in work that can cause workers to be injured or even die, efforts to reduce them are things that companies must do.



**Figure 1.** Reached Statistic Graphic  
Source: HSE PT. ANTAM Tbk, UBPN Sultra 2019

The results of previous research regarding the analysis of the success rate of implementing a workplace SMS in PT Antam's nickel mining company for each element

of the K3 policy (98.73%), K3 planning (96.53%) implementation and operation of activities (97.62%), measurement and evaluation (95.01%), review of K3 (96.75%) so that the average success rate of implementing SMK3 is (96.75%) and the value falls into category 3, namely satisfactory application assessment. According to (Sillia & Yusuf, 2019) the success of implementing SMK3 is an achievement and identifies weaknesses for future improvement.

Application of a Special Mining SMS for IUP production operation holders for processing and/or purification. Regarding occupational safety and health (K3) and Mining Operational Safety (KO) obtained Strongly Agree 271 or 51%, Agree 250 people or 39%, Doubt 79 people or 9%, Disagree 26 people or 1%, and Strongly Disagree Agree 0%.

PT. Antam Tbk. UBPN Sulltra has just socialized the Mining SMS, since January 1, 2017, which is still using Permen ESDM Number (38, 2014) regarding SMK3, while for the implementation and implementation of SMK3 at PT. Antam Tbk. UBPN Sultra and Partners were only held in July 2018 by using the Minister of Energy and Mineral Resources (26, 2018) and Minister Decision (K/30/MEM/, 2018). The Resume of the Internal Audit results of the Mining SMS carried out at PT. Antam Tbk. UBPN Sultra period January to December 2017 which has been carried out by the Internal Audit Team

PT. Antam Tbk. UBPN Sultra Pongkor Gold Mining Business Unit (Cross Audit) which was held from 17-20 July 2018 by following the Guidelines for the Application of the Mineral and Coal Mining SMS as referred to in attachment IV of the Minister of Energy and Mineral Resources Number with the number of (K/30/MEM/, 2018), then the level of achievement of the fulfillment of SMK3 Mineral and Coal at PT. Antam Tbk. UBPN Southeast Sulawesi in 2018 is 89% and there are no major findings (silver category).

The specificity of mining activities has long been recognized and has become the basis for consideration of the issuance of Government Regulation with the number of (19, 1973) concerning regulation and supervision of work safety in the mining sector. Based on PP Number (50, 2012) article 4 paragraph 2, that business sector agencies can develop guidelines for implementing SMK3 by continuing to adhere to the national policy on SMK3 in this regard, SMK3 is developed as a guideline for implementing SMK3 in the mineral and coal mining sector. SMK3 is prepared because mining activities can fulfill regulatory mandates, be it mining regulations, labor regulations, and work safety regulations.

The principle of K3 mining is to avoid mining accidents and dangerous incidents, as well as occupational diseases caused by mining businesses. SMK3 is applied as a standard in the preparation, application, and assessment of the K3 and KO (Operational Safety) management systems in mineral and coal mining companies. According to (Fachlevi et al., 2015), respiratory disease is a threat in mining.

PT ANTAM's programs in K3 and First KO Zero Accident Program with Super Safe and K3 Vigilance Reminder by HSE Manager. Second, the K3 Understanding and Improvement Program in the work location with a Safety briefing and Safety Campaign, K3 Training, Safety Talk. Third, the Unsafe action and Unsafe Condition Handling Program. According to (Putra, 2017) the safety division should do a briefing before doing work and also a daily briefing. According to (Dyatmika and Afnan, 2018) safety campaigns can be carried out, one of which is a safety poster.

Risk control is aimed at preventing exposure to health hazards or reducing the level of exposure to an acceptable level (Acceptable Level). Several programs are implemented to carry out risk control, namely: Daily Inspections, Safety Patrols, and Granting of Work Permits (special work permits). According to (Rinawati, 2018) a work permit is a special permit that ensures workers do work safely.

## CONCLUSION

The conclusion in this research, first the Mining SMS application at PT. Antam Tbk. UBPN Sultra has been implemented in accordance with the regulation Permen ESDM No. 26 of 2018 and the Minister of Energy and Mineral Resources with the number of 1827 K/MEM/2018 with 89% success in 2018 (silver category). Second, documenting mining accidents and work accident investigations in accordance with the Occupational Health and SMS Government Regulation with the number of 19 of 1973 and the implementation of reporting and investigation of work accidents in the field is in accordance with the laws and regulations, as well as the Occupational Safety and Health policy that has been issued by the Company itself, with success strongly agreeing to 85%. Recommendations for future research by classifying the sample of workers according to the level of position in one company. Third, Application of Special Mining SMS for IUP Production Operation Holders for Processing and/or Purification. Regarding occupational safety and health (K3) and Mining Operational Safety (KO) obtained Strongly Agree 271 or 51%, Agree 250 people or 39%, Doubt 79 people or 9%, Disagree 26 people or 1%, and Strongly Disagree Agree 0%

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