

Risk Management Process of “Mining Contractors Services Company” In Indonesia

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Abstrak

Pertambangan memiliki peran yang sangat penting dalam membangun negara kita. Pertambangan juga memberikan peran yang sangat signifikan dalam perekonomian nasional kita. Peran pertambangan terlihat jelas dimana pertambangan sebagai sumber penerimaan negara, memberikan kontribusi bagi pembangunan daerah, baik dalam bentuk dana bagi hasil maupun program pembangunan pemberdayaan masyarakat, memberikan nilai lebih pada neraca pertambangan, meningkatkan investasi, memberikan efek berantai positif pada pekerjaan. Manajemen risiko adalah proses interaktif yang digunakan oleh perusahaan pertambangan dan pengolahan untuk mengidentifikasi, mengevaluasi, dan memitigasi bahaya di tempat kerja guna mengurangi risiko bahaya seperti kebakaran, ledakan, tanah longsor yang tertimbun, gas beracun, suhu ekstrim, dan lain-lain. Jadi, manajemen risiko merupakan suatu alat yang jika digunakan dengan baik akan menghasilkan dan menciptakan lingkungan kerja yang aman, bebas dari ancaman bahaya dan kecelakaan di tempat kerja. Penambangan dan pengolahan batu bara merupakan kegiatan yang sangat berisiko, tidak hanya menyangkut keselamatan kerja. Oleh karena itu, untuk menjamin kelancaran operasi produksi, terhindar dari kecelakaan kerja, kejadian berbahaya dan penyakit akibat kerja, perlu diterapkan Keselamatan dan Kesehatan Kerja (K3) dalam kegiatan pertambangan dan pengolahan. PT. ANP akan menerapkan prinsip manajemen risiko dalam ISO 31000:2018. Analisis ini membantu kontraktor pertambangan kami dalam membuat keputusan yang tepat untuk memitigasi risiko dan menjadi kontraktor pertambangan multinasional.

Kata kunci: Manajemen Risiko, Pertambangan, Keselamatan dan Kesehatan Kerja (K3), Kontraktor.

Abstract

Mining has a very important role in developing our country. Mining also provides a very significant role in our national economy. The role of mining is clearly visible where mining is a source of state revenue, contributing to regional development, both in the form of profit-sharing funds and community empowerment development programs, providing a surplus value in the mining balance, increasing investment, providing a positive chain effect on employment. Risk management is an interactive process used by mining and processing companies to identify, evaluate, and mitigate hazards in the workplace in order to reduce the risk of hazards such as fire, explosion, buried landslides, toxic gases, extreme temperatures, and others. So, risk management is a tool which if used properly will produce and create a safe work environment, free from the threat of danger and accidents in the workplace. Mining and processing coal are a very risky activity, not only about work safety. Therefore, in order to ensure smooth production operations, avoid work accidents, dangerous incidents and work-related illnesses, it is necessary to implement Occupational Safety and Health (OHS) in mining and processing activities. PT. ANP will implement the principles of risk management in ISO 31000:2018. This analysis helps our mining contractor in making the right decisions to mitigate risks and become a multinational mining contractor.

Keywords: Risk Management, Mining, Occupational Safety and Health (OHS), Contractor.

INTRODUCTION

The risk management process is a series of systematic steps used to assist target owners/contractors in managing opportunities and threats/risks for the achievement of targets in a measurable and controlled manner (Akkiyat et al., 2019; Doval, 2019; Muthuveeran et al., 2022; Prabowo et al., 2022; Yue et al., 2020). It includes a process of identifying, assessing, and controlling problems that can threaten the sustainability of the company and business (Hidayat, 2019; Purnomo, 2017; Saudi et al., 2021; van Dorp et al., 2011). These threats can arise from aspects, such as economic crises, political issues, financial conditions, legal problems, accidents to natural disasters (Akkiyat et al., 2019; Doval, 2019; Sweileh, 2019; Trad et al., 2017).

Our risk management analysis aims to determine the position, condition and level of implementation of Mining Safety at PT. Abisatya Nusa Persada on the implementation of Mining Safety laws and regulations. The initial review includes evaluation of: (1) Processes within the company and process interactions, (2) Existing Occupational Health and Safety Management Policies, (3) Participation of mine workers and/or mine workers unions, (4) Responsibilities of every departmental leader, (5) Analysis and statistics of accidents, hazardous incidents and occupational diseases, (6) Control measures that have been implemented in the work location, (7) Normal and abnormal conditions and/or process conditions as well as potential incidents and emergencies during the product usage cycle and/or process duration cycle, (8) Non-compliance with previous recommendations, existing mining safety standards and/or procedures, or non-compliance with follow-up incident recommendations, (9) Personal factors of workers, (10) Work area design, processes, installations, machinery/equipment, operating procedures and work organization, including human adaptability, (11) Systems and implementation of maintenance/maintenance of mining facilities, infrastructure, installations and equipment, (12) Security of installations, (13) Feasibility of facilities and infrastructure, installation, and mining equipment, (14) Competence of technical personnel, (15) Evaluation of reports on the results of mining technical studies (Lokobal et al., 2014; Tserng et al., 2021).

METHOD

Risk management has a crucial role in the sustainability of the company, especially in business (Basuki, 2015; Bradie et al., 2023). Risk management will help the company to remain stable and even encourage performance improvements. In general, the implementation of risk management will establish procedures for dealing with threats, minimizing negative impacts and overcoming them. So that the company is able to make more informed decisions in future business development. PT ANP implements ISO 31000:2018 as a basis in the process of conducting corporate risk management and uses a framework as shown below in Figure 1 below.



Figure 1 Framework Risk Plan PT ANP.

Risk Management Objective & Goals

Risk management is a process of managing risk so the organization can achieve its goals. A strong fundamental is necessary for understanding the concept of risk management before it is implemented. The objective of PT ANP's risk management is to ensure the company's vision is to become a multinational mining contractor in providing mining services with perfect maintenance and operational strategy management. In its application, PT ANP will refer to ISO 31000:2018 standard regarding risk management. ISO 31000 provides a structured framework intended to align risk management objectives with organizational needs (Almeida et al., 2019).

Risk Management Principles and Commitments

The role of top management is very important in carrying out risk management and ensuring effective internal implementation (Wheelen et al., 2012). The management of PT ANP determines the principles and commitments that will be followed in the risk management process in the company. PT ANP's risk management principles will be applied in accordance with risk management principles in ISO 31000, 2018 as shown in Table 1 below.

Table 1 PT ANP Risk Management Principles & Commitment

Principles	Information
Integrated	Risk management activities are an integral part of company processes.
Structured and Comprehensive	PT ANP's risk management activities are systematic, structured, comprehensive and timely.
Customized	Risk management activities must be aligned with company's internal, external conditions and objectives.
Inclusive	Risk management activities will involve all stakeholders.
Dynamic	Risk management activities always pay attention to, feel and be responsive to any changes that occur.
Information	Risk management always uses information such as experiences, observations, estimates, expert judgments and available data from valid sources.
People and Culture	Recognize the company's capabilities, perceptions and goals of each individual inside and outside the company, especially those that support and hinder PT ANP's goals.
Continuous improvement	Risk management activities are carried out on an ongoing basis and are based on action maturity.
Create and protect value	Risk management activities must be able to create and protect added value for PT ANP.

Risk Management Process – PT. ANP adopts a structured approach in managing risks related to mining safety. The risk management process includes 5 activities, namely context determination, risk identification, risk analysis, risk evaluation, risk treatment, in which the five activities are carried out by communication and consultation and ended with monitoring and review.

Communication and consultation performed in the early stages of the Risk Management process involving internal parties and external parties.

Based on ISO 31000, communication and consultation includes activities namely;

1. Bringing together various areas of expertise in the risk management process,
2. Ensure different views are considered when defining risk criteria and evaluating risks.
3. Provide adequate information to facilitate risk monitoring and decision making,
4. Build a sense of inclusiveness and ownership among those affected by risks. The management of PT ANP will establish regular communication and consultation every semester, so that it is expected to be able to create adequate support for risk management activities and make activities right on target.

The steps for determining the risk context in the risk management process consist of at least:

1. Define the scope, as well as the depth and breadth of risk management activities to be implemented, including specific statements and exceptions
2. Define activities, processes, functions, projects, products, services or assets in terms of time and location as well as goals and objectives
3. Define the relationship between a particular project or activity with other projects or activities of the company
4. Define the risk assessment methodology
5. Define how the work is evaluated in risk management
6. Identify and determine the decisions that must be made
7. Identify the scope or framework of study required.

Risk Management Cost

PT ANP requires funds in implementing the risk management and mitigation process that have been determined. Costs are expected to increase by around 10% to cover inflation and price hikes per year. After two years of heavy equipment units and other assets, it is necessary to set a budget for additional assets due to upsize production. The aim is for the company to grow and advance after the next 5 years.

RESULT AND DISCUSSION

Based on the description of the risk management process in the materials and methods above, the following are the results of risk management discussion at PT ANP in Indonesia.

Risk Management Objectives & Goals

PT ANP risk management objectives are divided into three stages that is short-term, mid-term and long-term. The company identifies risks, both risks that have the potential to arise from internal factors and external factors of the company, in accordance with predetermined risk management goals and objectives.

Table 2 Risk Management Objectives and Goals

	Risk Management Objectives	Risk Management Goals	
Short Term (Y.0 s/d <Y.1)	Marketing Plan	Approach persuasively and effectively to land owners (Build relationships with clients) Analyzing the market share and rates of mining contracts in similar companies and at the production market level	To keep the partnership running well. To get competitive mining contract rates among other competitors (competitive prices)
	Human Capital Plan	Recruitment process agreed with the agency and government around safe and quality mining areas Creating CSR (Corporate Social Responsibility)	To prevent protests from local residents regarding the number of local content recruitment To prevent demonstrations or conflicts with communities around the mining area
	Operational Plan	Establishing a risk management committee, its roles and responsibilities (SOP) Identify, evaluate and mitigate very high and high category risks (internal and external risks).	To monitor and review all activities according to SOP, which can carry risks in operational costs and minimize work accidents To ensure operations run well according to SOP, safe, effective, efficient and do not cause work errors and get a positive profit margin
	Financial Plan	Monitoring and reducing costs that are outside the budget for efficiency and cost effectiveness	To reduce planned costs will not exceed the budget and help increase company profitability
Medium Term (Y.1 s/d Y.4)	Marketing Plan	Creating a company brand image that respects Health Safety Environment (HSE) values Continuous implementation or mining contract tenure risk mitigation	To provide trust or confidence the land owner provides a secure mining contract. To be able to commit mining production to land owner targets
	Human Capital Plan	Providing availability of modern heavy equipment to support the quality of mining work Carry out continuous and tiered development and training processes for each employee Analyzing employee salary levels compared to competing companies including other benefits such as bonuses	To become a contractor that is able to compete with a quality work system To prevent the occurrence of mis-operations that will result in mining accidents To prevent high employee turnover and increase employee performance
	Operational Plan	Review the costs of all departments with the aim of reducing costs if necessary Identify, evaluate and mitigate moderate and low category risks (internal and external risks).	To prevent revenue from being eroded by project operational costs To minimize or even eliminate all operational risks
	Financial Plan	Maximizing the factors that affect the increase in profit Monitoring production values compared to costs will make the company's profit increase	To increase the company's profits will exceed the budget, right? To create a good company image in the eyes of investors
Long Term (Y>4)	Marketing Plan	Developing company wings on other land owners and types of mining other than coal	To increase the potential of the mining area to make the company bigger and more advanced (not only in the coal sector)
	Human Capital Plan	Continuing to fulfill the competence of all employees Create a corporate culture (company cultures) that supports high corporate values	To create work of high quality so that it will make low costs and work results quickly, safely and effectively So that employees can follow all the good corporate culture so that it will impact on the production value
	Operational Plan	Create/implement company quality management Implementation of all procedures ensures that there are no procedural errors in all aspects of work	To provide a positive value for the company in the eyes of landowners and increase production of increasingly high quality To prevent wastage of costs that impact the decline in the value of company profits
	Financial Plan	Maintain all company assets to support the production process Preparing the release or addition of capital from investors	Efficient and effective use of assets so as to prevent out-of-budget costs To prevent a shortage of business capital due to increased demand for production from land owners

Internal Factors

Internal Factors are the internal environment that influences the company in an effort to achieve its goals. Internal Factors include:

1. Routine and non-routine activities and processes
2. Changes to the organization, work environment, activities, or materials
3. Modifications to mine management systems, including temporary changes, and impacts on operations, processes and activities
4. Newly built facilities, newly introduced equipment or processes, as well as Mining Service Company activities/installations within the work site
5. Normal and abnormal conditions and/or process conditions as well as potential incidents and emergencies during the product usage cycle and/or process duration cycle
6. Non-compliance with previous recommendations, existing mining safety standards and/or procedures, or non-compliance with follow-up incident recommendations
7. Personal factors of workers
8. Design of work areas, processes, installations, machinery/equipment, operating procedures and work organization, including human adaptability
9. System and implementation of maintenance/maintenance of mining facilities, infrastructure, installations, and equipment
10. Secure installation
11. Feasibility of mining facilities and infrastructure, installations, and equipment
12. Technical competency
13. Evaluation of the report on the results of mining technical studies

External Factors

External Factors are the external environment that influences the company in an effort to achieve its goals. And to convince external stakeholders of the goals and focus considered when developing risk criteria. External Factors include:

1. Locally, nationally, regionally and internationally competitive cultural, political, legal, regulatory, financial, technological, economic, natural and environmental
2. Key drivers and trends impacting organizational goals
3. Perceptions and values of external stakeholders
4. The activities of everyone who has access to the workplace, including Mining Services companies and guests
5. Newly built facilities, newly introduced equipment or processes, as well as Mining Service Company activities/installations outside the work location
6. Identified hazards originating outside the work site, which could endanger the health and safety of people in the workplace that are within the company's control
7. Infrastructure, equipment and materials in the workplace, provided by the company or other parties
8. Legal obligations related to hazard identification and risk assessment and necessary controls
9. Other matters affecting Mining Safety

Risk Management Principles and Commitments

PT ANP risk management principles and commitments are calculated according to the level and organized structure as shown in Figure 2 below.

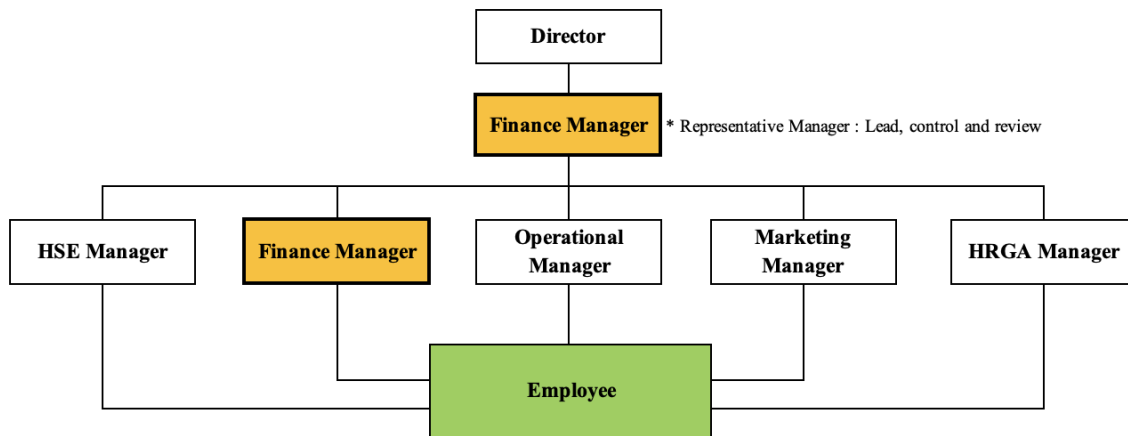


Figure 2 Risk Management Organization Structure

Source: Author, 2021

Risk Management Process

The risk management process includes implementing policies, procedures and practices to carry out context setting, risk identification, risk analysis, risk evaluation, risk treatment, monitoring and review, and communication and consultation. PT ANP risk management process basically refers to ISO 31000:2018 as shown in Figure 3 below.

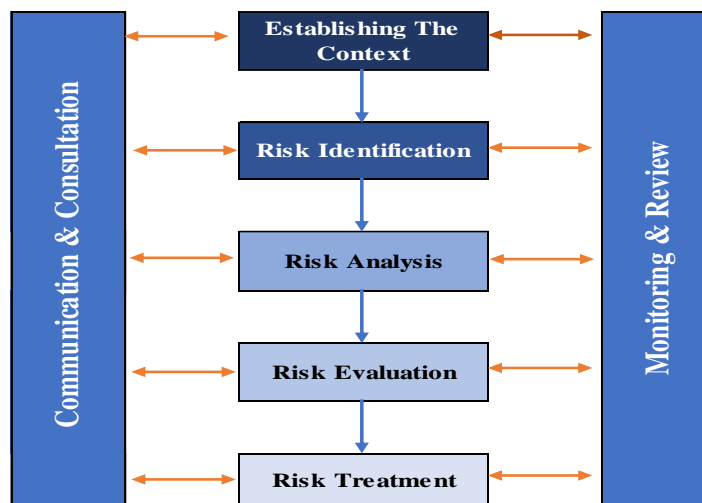


Figure 3 Risk Management Process based on ISO 31000

Source: Marsden, 2018

Risk Management Identification

PT ANP conducts risk identification both risks that have the potential to arise from internal factors and external factors of the company, in accordance with predetermined risk management goals and objectives. When defining risk criteria, the factors that must be considered at least consist of:

1. Type of risk
2. Consequences/severity that could occur and how to measure them
3. The possibility/probability that can occur and how to measure it
4. Determination of the level of risk
5. Acceptable or tolerable level of risk
6. The level of risk that requires control

Table 3 Risk Identification of PT ANP.

Risk Events	
Code	
Internal Risks	
Marketing	
R001	Partnership with client (land owner) failed/not fulfilled
R002	Mining contract rates are not competitive/competitive
Operational	
R003	Operations are not efficient and effective, thereby reducing the productivity of heavy equipment
R004	There was a waste of operational costs
R005	Work accident in mining area
R006	An error occurred while operating the machine
Human Resource	
R007	Many employees resign or turn over high
R008	Employees do not match the required competencies
Finance	
R009	Shortage of capital due to demand for increased production
R010	The production value did not reach the target
Kode External Risks	
Marketing	
R011	The emergence of competitors with other contractors in the same mining area.
R012	Conflicts with clients or land owners
R013	Conflict with consultant
R014	Company value decreases in the eyes of land owners
Operational	
R015	Landowners are dissatisfied or lack confidence in the production results
R016	Delay in delivery of heavy equipment spare parts.
R017	Delay in mobilizing heavy equipment
R018	The quality of spare parts for heavy equipment is poor
R019	Mining work business permit is very difficult or frozen/revoked.
R020	Natural disasters (Earthquakes and Floods)
R021	Fire
R022	Electrical energy, water, telephone and internet down
R023	New Normal Covid 19 or other pandemics
Human Resource	
R024	Human resource conflict with the surrounding community
R025	Environmental issues for the local community
R026	Increase in the value of UMR (Regional Minimum Wage)
Finance	
R027	Increase in corporate taxes
R028	Criminal acts (Corruption and theft).
R029	The country is in a state of crisis both locally and globally

Based on the analysis of internal and external risks, PT ANP found 29 risks that have potential to disrupt the running process of the company. PT ANP then identifies the causes, symptoms and positive factors (controls) for these risks, as shown in Table 3 below.

Table 4 Likelihood Value (Probability).

Likelihood Frequency (Probability)		
Index	Frequency	Description of Time
1	Rare	< 2 times per year
2	Unlikely	2 – 5 times per year
3	Possible	6 – 12 times per year
4	Likely	1 – 7 times per month
5	Certain	7 – 12 times per month

Source: Author, 2023

Table 5 Impact Value.

Index	Impact	Impact on company reputation (Qualitative)	Impact on company performance targets (Qualitative)	Impact on the company's business operations (Qualitative)	Impact on Customers
1	Insignificant	No reputation impact	Berdampak sangat kecil, target kinerja masih dapat dicapai	Very small impact, performance targets can still be achieved	Customer Satisfaction Index : 81% - 100%
2	Minor	Internal Impact	Berdampak pada pencapaian kinerja perusahaan sedikit dibawah target	Has an impact on achieving company performance slightly below the target	Customer Satisfaction Index : 61% - 80%
3	Moderate	Local impact (city or district)	Tertundanya pencapaian target perusahaan	Delayed achievement of company targets	Customer Satisfaction Index : 41% - 60%
4	Major	Regional Impact (Province)	Berdampak pada pencapaian kinerja perusahaan jauh dibawah target	The impact on achieving company performance is far below the target	Customer Satisfaction Index : 21% - 40%
5	Catastrophic	National scale impact	Tidak tercapainya target kinerja perusahaan	Failure to achieve company performance targets	Customer Satisfaction Index : 0% - 20%

Source: Author, 2023

PT ANP evaluates risk by using a graphical map (x, y) which illustrates the relationship between the probability of an event and the resulting impact. The graph is divided into five areas, namely very low, low, medium, high, very high. In risk evaluation, PT ANP determines the parameters, matrix, magnitude and risk appetite as shown in Tables 5 below.

Risk Analysis Matrix			Impact Level						
			1	2	3	4	5		
Likelihood Levels			Insignificant	Minor	Moderate	Significant	Catastropic		
			5	Almost Certain	5	10	15	20	25
			4	Likely	4	8	12	16	20 R005 R016
			3	Possible	3	6	9 R007 R009 R010	12 R002 R003 R004 R006 R015 R029	15 R001 R022 R025
			2	Unlikely	2	4 R011	6 R026 R027	8 R008 R017 R018 R019 R021 R022	10 R014 R020 R024 R028
			1	Rare	1	2	3 R013	4 R012	5

Table 6 PT ANP Inherent Risk Evaluation Matrix.

Source: Author, 2023

PT ANP will determine the value of risk appetite in accordance with the level of risk that the company is ready to accept by considering financial resources, the company's business strategy and legal aspects. As a startup company, this risk appetite can change according to the company's future development, however, at this early stage PT ANP determines risk appetite as shown below

Table 7 Risk Appetite

Risk Levels	Risk Amount	Actions Taken
Very high	15 – 25	Immediate action is needed to manage the risk (in the short term)
Tall	10 – 14	Action needed to manage risk (in the short term)
Currently	5 – 9	Action will be taken in the medium term
Low	4	The risk is acceptable to the company and no action is required.
Very low	1 – 3	

Source: Author, 2023

Table 8 Treatment Plan

Code	Risk Event		Risk Treatment	
	Internal Risks		Mitigation Plan	Category
Marketing				
R001	Partnership with client (land owner) failed/not fulfilled		Strengthening the marketing strategy by means of a persuasive approach and discussions with land owners by introducing a value company which is handled by qualified and experienced management in the coal mining process	Risk Avoidance
R002	Mining contract rates are not competitive/competitive		Recalculating cash costs for all operations so that the cost value of \$/Bcm or \$/Ton can be low to determine the rate of mining services when tenders are carried out	Risk Avoidance
Operational				
R003	Operations are not efficient and effective, thereby reducing the productivity of heavy equipment		Equalizing the perceptions of the Mine operation and Technical Mining teams must be the same between the design and implementation of the excavation	Risk Reduction
R004	There was a waste of operational costs		Strengthening safety & mechanical awareness, by conducting cost reduction campaigns in each department	Risk Reduction
R005	Work accident in mining area		Strict socialization of the company's Safety Golden Rules, Fatigue management, monitoring of the workplace, and conducting campaigns to work safely and return home to love your family	Risk Reduction
R006	An error occurred while operating the machine		Conduct basic and advance training for operators regarding heavy equipment operation and mechanical awareness	Risk Reduction
Human Resources				
R007	Many employees resign or turn over high		Conduct a total review related to benefits and performance achievements, by conducting market analysis of benefits on competitors	Risk Avoidance
R008	Employees do not match the required competencies		Evaluation of employee development is adjusted to the job description, by making a TNA (Training Need Analysis) and carrying out a continuous certification process	Risk Avoidance
Finance				
R009	Shortage of capital due to demand for increased production		Trying to find or increase capital from existing investors or new investors, with the support of a marketing team that can convince investors with the company's brand image	Risk Sharing
R010	The production value did not reach the target		Monitoring of heavy equipment performance and maintenance as well as competence of field human resources	Risk Reduction
Code				
Marketing				
R014	Company value decrease in land owners' point of view		Increasing positive company culture to boost the performance of employees who have high productivity	Risk Sharing
Operational				
R015	Landowners are dissatisfied or lack confidence in the production results		Monitor coal production operations on a daily basis and immediately carry out improvements if production irregularities occur	Risk Avoidance
R016	Delay in delivery of heavy equipment spare parts		Conducting meetings with vendors and supply agreement commitments, there must be a supply penalty	Risk Sharing
R017	Delay in mobilizing heavy equipment		Choose a quality expedition and have direct delivery access or not be given by third parties	Risk Sharing
R018	The quality of spare parts for heavy equipment is poor		Using genuine or aftermarket spare parts that are OEM certified	Risk Reduction
R019	Mining work business permit is very difficult or frozen/revoked		Use a consultant who can carry out the process according to the rules and the conditions are monitored	Risk Sharing
R020	Natural disasters (Earthquakes and Floods)		Mitigate disaster management and create a disaster mitigation committee	Risk Avoidance
R021	Fire		Carry out safety awareness of all employees for fire prevention and mitigation, analyze potential fire areas and their prevention, make water trucks with water canon facilities, place fire extinguishers/PSS in several places in the project	Risk Reduction
R022	Electrical energy, water, telephone and internet down		Maintenance of gensets according to procedures and spare parts must be ready for the project, as well as providing spare gensets	Risk Reduction
R023	New Normal Covid 19 or other pandemics		Do a pandemic analysis and prevention, keep living a healthy life	Risk Sharing
Human Resources				
R024	Human resource conflict with the surrounding community		Take a persuasive approach through discussions with the local government and activate the CSR function	Risk Reduction
R025	Environmental issues for the local community		Reviewing the design of mine waste streams with structured water treatment and watering coal handling roads	Risk Reduction
Finance				
R028	Criminal acts (Corruption and theft)		Conducting religious events at the camp, making sports facilities and holding entertainment, and tightening security patrols	Risk Reduction
R029	The country is in a state of crisis both locally and globally		Conducting vendor analysis and prior negotiations, to reduce costs due to price volatility during the global crisis	Risk Sharing

PT ANP has 29 risks that have been identified, but based on the value of risk appetite there are 5 risks (R011, R012, R013, R026, R027) that are acceptable to the company and do not need to be handled. Meanwhile, for the other 24 risks, steps will be taken to address both the short and medium term.

After the above risk treatment has been carried out, the evaluation value of the possibility, impact and level of each risk is shown in Table 9 below.

Table 9 Risk Evaluation Residual Matrix

Risk Analysis Matrix			Impact Level				
			1	2	3	4	5
			Insignificant	Minor	Moderate	Significant	Catastrophic
Likelihood Levels	5	Almost Certain	5	10	15	20	25
	4	Likely	4	8	12	16	20
	3	Possible	3	6	9	12	15
	2	Unlikely	2	4 R010 R011	6 R001 R002	8	10
	1	Rare	1	2	3 R007 R009 R013 R026 R027	4 R003 R021 R006 R028 R012 R015 R017 R018 R019	5 R005 R014 R016 R020 R023 R024 R025 R028

Recording and Reporting

The last stage in risk management process is recording and reporting risk management activities. The risk management team will document and report all results of PT ANP's risk management every semester. This aims to communicate various risk management activities, provide information for decision making and to improve risk management process activities within PT ANP internally. This will be carried out by the finance manager and administrator as MR (management representative) in PT ANP's risk management activities.

Risk Management Cost

In carrying out risk management activities, of course PT ANP requires funds to carry out risk mitigation activities that have been determined. Table 3.9 below shows the estimated costs to be incurred by PT ANP in risk management activities over the next five years.(in thousand)

Table 10 Risk Management Cost

Item	Rates	Man Power	Year 0	Man Power	Year 1	Man Power	Year 2	Man Power	Year 3	Man Power	Year 4	Man Power	Year 5
Training	5,000	14	70,000	204	1,017,600	345	1,725,200	586	2,931,200	587	2,936,200	595	2,972,800
Covid 19 Protocol	2,000	14	28,000	204	407,040	345	690,080	586	1,172,480	587	1,174,480	595	1,189,120
Asset Insurance (Aggregate Annual Detuctible)	0.007	-	-	-	1,115,121	-	2,073,904	-	3,978,039	-	3,222,211	-	3,231,549
Others (maintenance, agreement, etc.)	-	-	-	-	1,000,000	-	1,100,000	-	1,210,000	-	1,573,000	-	2,202,200
Total			98,000		3,539,761		5,589,184		9,291,719		8,905,891		9,595,669

Costs are expected to increase by around 10% to cover inflation and price hikes per year. After 2 years of heavy equipment units and other assets, it is necessary to set a budget for additional assets due to upsize production. The aim is for the company to grow and advance after the next 5 years. The table above shows the costs that must be incurred by the company for risk management activities every year for 5 years. These expenses are adjusted to the company's risk management objectives in the short, medium and long term.

CONCLUSION

Mining contractor company is a very potential business in Indonesia. Mining products are now a very valuable commodity. Companies can gain many benefits if they can implement a good risk management process. A well-structured business must have a solid risk management plan and risk management team. PT ANP really understands that a company must build a solid team and always apply applicable operational standards. We found five items in the very high risk category and ten items in the high risk category that require focus on mitigation activities. The risk management team will continue to monitor the mitigation process for sustainable results (Putra et al., 2021).

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