



**MINISTRY OF HUMAN RESOURCES
DEPARTMENT OF OCCUPATIONAL
SAFETY AND HEALTH**

GUIDELINES ON OCCUPATIONAL SAFETY AND HEALTH IN COAL MINING OPERATIONS

2025



GUIDELINES ON OCCUPATIONAL SAFETY AND HEALTH IN COAL MINING OPERATIONS 2025

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Preface



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**Director General
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2025**

These guidelines may be cited as the Guidelines on Occupational Safety and Health in Coal Mining Operations. The aims of these guidelines are to develop and recommend strategies to mitigate or eliminate identified risks, thereby ensuring the safety and health of employees involved in mining operations.

Employees working in mining operations are frequently exposed to various occupational hazards. Among the most critical are explosion and fire caused by coal dust and spontaneous combustion, ground and structural hazards such as trench wall collapses, unstable ground and falling object. Machinery and equipment accidents, including struck-by incidents, entrapment, and vehicle collisions, remain significant concerns, as do risks from working at height.

Employees are also exposed to harmful substances such as coal dust, chemicals, and heavy metals, which can lead to respiratory diseases. Chronic effect from health hazards also arise from repetitive motions and heavy lifting, which can result in musculoskeletal diseases, including back pain and joint pain. Additionally, prolonged exposure to high noise levels can lead to permanent hearing loss.

Therefore, it is the shared responsibility of both employers and employees to ensure that the workplace is free from risks and creating a safe and healthy working environment. These guidelines provide a comprehensive overview of the risks associated with coal mining operations, along with practical measures to minimize or eliminate these risks. Their implementation is expected to reduce the occurrence of both acute injuries and chronic diseases. Furthermore, fostering a safer work environment is likely to enhance overall productivity and safety and health in the workplace.

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Abbreviations

DOSH

Department of Occupational Safety and Health Malaysia

ERP

Emergency Response and Preparedness

ERT

Emergency Response Team

NADOPOD

Occupational Safety and Health (Notification of Accident, Dangerous Occurrence, Occupational Poisoning and Occupational Diseases) Regulations 2004

OSHA 1994

Occupational Safety and Health Act 1994

PPE

Personal Protective Equipment

Terms and Definitions

Employer

means any person who has entered into a contract of service to employ any other person as an employee

Employee

means any person who has entered into a contract of service with an employer

Hazard

means source with a potential to cause injury and ill health

Accident

means an occurrence arising out of or in connection with work that results in fatal injury or non-fatal injury

Heavy Equipment/machinery

refers to heavy equipment or machinery designed for executing coal mining operations

Occupational Musculoskeletal Disorder (OMSD)

means a disorder of the muscles, tendons, ligaments, joints, nerves, blood vessels, or related soft tissue, including a sprain, strain, or inflammation, caused or aggravated by work

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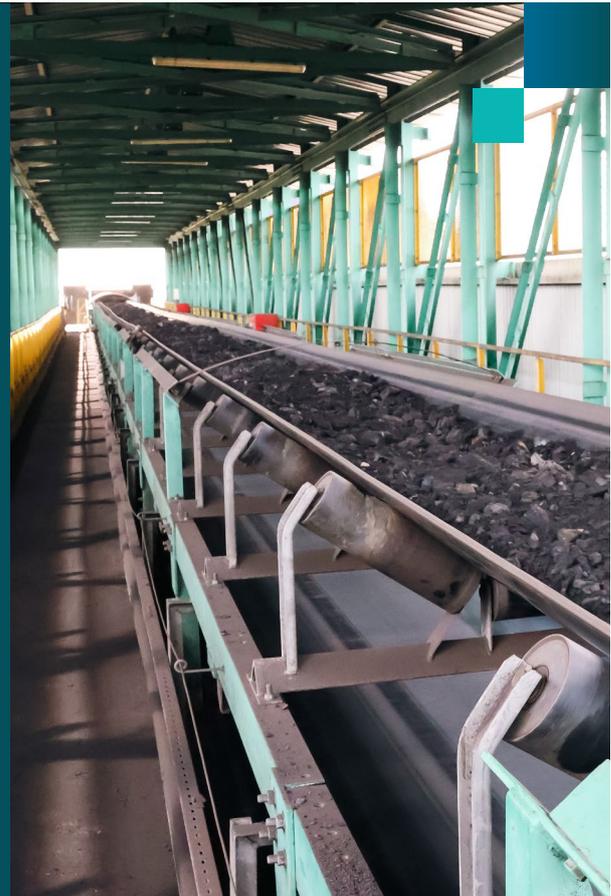
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Introduction



Coal mining is an essential industry that contributes significantly to global energy production and economic development. However, it also poses significant safety and health risks to employees due to the inherently hazardous nature of mining operations. Ensuring the well-being of employees while maintaining operational efficiency is paramount for the long-term sustainability of the coal mining industry.

These guidelines are developed to provide a comprehensive framework for enhancing safety and health in coal mining. They are intended as a vital resource for employers, employees, and regulatory authorities, aiming to cultivate a strong culture of safety, health, and well-being across the industry. By implementing these guidelines, stakeholders can effectively reduce risk, improve workplace safety, and safeguard the health of all personnel involved in coal mining activities.



1.1 Objectives

The objectives of these guidelines are to:

- a. ensure the safety and health of employees in mining operations; and
- b. develop and recommend strategies to mitigate or eliminate identified risks, thereby promoting a safer and healthier work environment.

1.2 Scope and Application

The scope of these guidelines covers all phases of coal mining operations, including exploration, extraction, processing, and closure. These guidelines are applicable to workplaces as stipulated under the Occupational Safety and Health Act 1994 (OSHA 1994). These guidelines focus on the safety and health of employees in coal mining operations by establishing methods for risk assessment, hazard identification, incident management, and the implementation of occupational safety and health programs.

2.0

Legal Requirement



2.1 Occupational Safety and Health Act 1994 (OSHA 1994)

The Occupational Safety and Health Act 1994 (OSHA 1994) is applicable to mining operations in Malaysia. All mining activities, including coal mining operations, are required to fully comply with the legislation enforced by the Department of Occupational Safety and Health (DOSH). DOSH is responsible for administrating, managing, and enforcing matters related to occupational safety and health. Its enforcement activities aim to ensure the safety, health, and welfare of employees and to protect other persons who may be exposed to hazards arising from workplace activities.

OSHA 1994 and its regulations aim to secure the safety, health, and welfare of persons at work and protect others in relation to the activities of persons at work.

The objectives of this Act are:

- a. to secure the safety, health, and welfare of persons at work against risks to safety or health arising out of the activities of persons at work;
- b. to protect persons at a place of work other than persons at work against risks to safety or health arising out of the activities of persons at work;
- c. to promote an occupational environment for persons at work which is adapted to their physiological and psychological needs; and
- d. to provide the means whereby the associated occupational safety and health legislations may be progressively replaced by a system of regulations and approved industry codes of practice operating in combination with the provisions of this Act designed to maintain or improve the standards of safety and health.

2.2 Duties and Responsibilities

Every employer shall conduct their undertaking in such a manner as to ensure, so far as is practicable, the safety and health of all employees and to ensure that other persons who may be affected thereby are not exposed to risks to their safety or health. Even in the absence of a specific legal requirement, all work must be carried out without posing undue risk of injury or occupational disease to any person.



2.2.1 Duties of Employer

Section 15 (1) of the OSHA 1994 stipulated that it shall be the duty of every employer to ensure, so far as is practicable, the safety, health, and welfare at work of all his employees.

Without prejudice to the generality of subsection (1), the matters to which the duty extends include in particular:

- a. the provision and maintenance of plant and systems of work that are, so far as is practicable, safe and without risks to health;
- b. the making of arrangements for ensuring, so far as is practicable, safety and absence of risks to health in connection with the use or operation, handling, storage, and transport of plant and substances;
- c. the provision of such information, instruction, training, and supervision as is necessary to ensure, so far as is practicable, the safety and health at work of his employees;
- d. so far as is practicable, as regards any place of work under the control of the employer, the maintenance of it in a condition that is safe and without risks to health and the provision and maintenance of the means of access to and egress from it that are safe and without such risks;
- e. the provision and maintenance of a working environment for his employees that is, so far as is practicable, safe, without risks to health, and adequate as regards facilities for their welfare at work; and
- f. the provision of the development and implementation of procedures for dealing with emergencies that may arise while his employees are at work.

2.2.2 Duties of Principal

Section 18A (1) of OSHA 1994 stipulated that it shall be the duty of every principal to take, so far as is practicable, such measures as are necessary to ensure the safety and health of—

- a. any contractor engaged by the principal when at work;
- b. any subcontractor or indirect subcontractor when at work; and
- c. any employee employed by such contractor or subcontractor when at work.



2.2.3 General Duties of Employee

Section 24 (1) of OSHA 1994 stipulated that it shall be the duty of every employee while at work:

- a. to take reasonable care for the safety and health of himself and of other persons who may be affected by his acts or omissions at work;
- b. to cooperate with his employer or any other person in the discharge of any duty or requirement imposed on the employer or that other person by this Act, or any regulation made thereunder;
- c. to wear or use at all times any protective equipment or clothing provided by the employer for the purpose of preventing risks to his safety and health; and
- d. to comply with any instruction or measure on occupational safety and health instituted by his employer or any other person by or under this Act or any regulation made thereunder.

2.2.4 General Duties of Employers and Self-Employed Persons to Persons Other than Their Employees

Section 17 of the OSHA 1994 stipulated that—

- a. it shall be the duty of every employer and every self-employed person to conduct his undertaking in such a manner as to ensure, so far as is practicable, that he and other persons, not being his employees, who may be affected thereby are not thereby exposed to risks to their safety or health.
- b. It shall be the duty of every employer and every self-employed person, in the prescribed circumstances and in the prescribed manner, to give to persons, not being his employees, who may be affected by the manner in which he conducts his undertaking, the prescribed information on such aspects of the manner in which he conducts his undertaking as might affect their safety or health.

2.2.5 Discrimination Against Employee

Section 27 of the OSHA 1994 stipulated that—

- a. No employer shall dismiss an employee, injure him in his employment, or alter his position to his detriment by reason only that the employee—
 - i. makes a complaint about a matter which he considers is not safe or is a risk to health;
 - ii. is a member of a safety and health committee established pursuant to this Act;
 - iii. exercises any of his functions as a member of the safety and health committee.; or
 - iv. has assisted an officer or assessor in any inquiry in the conduct of any inspection or investigation under this Act.
- b. No trade union shall take any action on any of its members who, being an employee at a place of work, carries out (i) to (iii) above.

2.3 Occupational Safety and Health Policy

- a. The employer shall prepare a written statement of Occupational Safety and Health Policy (OSH Policy) for the workplace, along with necessary arrangements to implement the policy, as stipulated under Section 16 of the OSHA 1994. This OSH policy demonstrates the employer's strong commitment to ensuring occupational safety and health in accordance with the requirements of the Act.
- b. The duty to prepare an OSH Policy shall apply to all employers, except those with not more than five employees, as specified in the Occupational Safety and Health (Employers' Safety and Health General Policy Statements) (Exception) Regulations 1995.

The OSH Policy should include the following key matters:

- i. commitment of top management to occupational safety and health;
 - ii. compliance with applicable legal requirements;
 - iii. employees' involvement in safety and health initiatives;
 - iv. regular review of the policy; and
 - v. the signature or endorsement of the employer.
- c. The employer should consult with employees or their representatives to reach a consensus before formulating the OSH Policy.
 - d. The OSH Policy should be concise and clearly written.
 - e. The OSH Policy should be signed or endorsed by the employer, communicated effectively, and readily accessible to all employees and relevant stakeholders, including customers.
 - f. The OSH Policy shall be reviewed and updated regularly to reflect current situations and any organizational and regulatory changes. The employer is responsible for monitoring and evaluating the implementation and effectiveness of the OSH Policy.

2.4 Safety and Health Committee

- a. Pursuant to section 30 of the OSHA 1994, every employer shall establish a Safety and Health Committee at the place of work if there are 40 (forty) or more persons employed at the place of work or directed to do so by the Director General of DOSH.
- b. The establishment of the safety and health committee shall be based on the provisions of the Occupational Safety and Health (Safety and Health Committee) Regulations 1996.
- 
- c. The safety and health committee shall meet as often as may be necessary, not less than once in three months, based on provisions in the Occupational Safety and Health (Safety and Health Committee) Regulations 1996.
- d. The safety and health committee shall carry out its functions and duties as prescribed in the Occupational Safety and Health (Safety and Health Committee) Regulations 1996. Such functions and duties of the safety and health committee are:
- i. to assist in the development of safety and health rules and safe systems of work;
 - ii. to review the effectiveness of implemented safety and health programs;
 - iii. to inspect the place of work at least once in every three months to ascertain if there is anything prejudicial to the safety and health of persons employed therein;
 - iv. to report to the employer of any unsafe or unhealthy condition or practices at the place of work together with recommendations for corrective actions;
 - v. to review the occupational safety and health policies at the place of work and make recommendation to the employer for any revision of such policies; and
 - vi. to inspect the place of work, as soon as it is safe to do so, after any accident, near-miss accident, dangerous occurrence, occupational poisoning, or occupational disease has occurred at the place of work and make recommendations to the employer of the measures that shall be taken to prevent the recurrence of such an accident.

- e. The employer shall take such steps as are reasonably practicable to provide the members of the safety and health committee with adequate training in occupational safety and health so as to enable them to perform the functions of the committee effectively.
- f. For workplace with fewer than forty (40) employees, the employer is to initiate safety and health meetings with employees to discuss relevant safety and health matters. The meetings should focus on addressing unsafe acts, conditions, or practices and on fostering ongoing cooperation and interest in workplace safety and health. Records of the meetings, including the issues discussed and any actions taken, should be properly maintained.

2.5 Appointment of Occupational Safety and Health Coordinator (OSH Coordinator)

- a. Section 29A of the OSHA 1994 stipulated that an employer whose place of work is not included in any class or description of place of work as published in the Gazette under subsection 29 (1) shall appoint one of his employees to act as an Occupational Safety and Health Coordinator (OSH Coordinator) if he employs five or more employees at his place of work.
- b. An employee appointed as an occupational safety and health coordinator shall be appointed for the purpose of coordinating occupational safety and health issues at the place of work.



2.6 Occupational Safety and Health Risk Management

Section 18B (1) of the OSHA 1994 stipulated that every employer, self-employed person or principal shall conduct a risk assessment in relation to the safety and health risk posed to any person who may be affected by his undertaking at the place of work.

To fulfil this duty the following principles and practices should be implemented;

- a. The employer should develop and implement OSH risk management to identify workplace hazards, evaluate the associated risk, and determine appropriate control measures to eliminate or minimize harm.
- b. The risk management shall comply with all relevant standards, guidelines, and legislations applicable in Malaysia.
- c. Risk assessments shall be conducted before the introduction of any new processes or work activities.
- d. The effectiveness of control measures should be regularly monitored.
- e. Risk assessments shall be reviewed periodically or upon any incident, when there is any significant change in work process, practice, or procedure, or when new information on hazards is made known.
- f. Employees conducting risk assessments should receive appropriate training. The training should cover hazard identification and risk assessment methodologies, and this includes training on risk management processes and the effective use of risk management tools and techniques.



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- g. Clear and effective communication is essential for ensuring that all stakeholders—including employees, contractors, and other relevant parties—are aware of workplace hazards and control measures in place. Employers should establish and maintain proper channels for disseminating risk-related information.
 - h. Documentation of all risk assessments and control measures shall be maintained. This includes records of identified hazards, risk evaluations, implemented controls, and related employee training in risk management procedures.

2.7 Occupational Safety and Health (Notification of Accident, Dangerous Occurrence, Occupational Poisoning and Occupational Diseases) Regulations 2004 (NADOPOD)

- a. The employer shall report any accident, dangerous occurrence, occupational poisoning, or occupational disease to the nearest DOSH office, as well as to any relevant authority and statutory body, in accordance with applicable legal requirements.
- b. Notification to DOSH is required immediately in the quickest way and using the approved form, and must be submitted within seven (7) days whenever any of the following incidents occur.
 - i. loss of life to any person;
 - ii. bodily injury to any person that prevents the person from following his normal occupation for more than four calendar days;
 - iii. serious damage to machinery or other property;
 - iv. a dangerous occurrence as specified in Second Schedule of the NADOPOD Regulations;
 - v. an occupational poisoning or occupational disease as specified in the Third Schedule of the NADOPOD Regulations.
- c. Investigation into any accident

An employer shall immediately undertake an investigation into the cause of any loss of life to any person, bodily injury to any person, serious damage to machinery or other property, involvement in a dangerous occurrence as specified in the Second Schedule of the NADOPOD Regulations, and involvement in occupational poisoning or occupational disease as specified in the Third Schedule of the NADOPOD Regulations.

d. Pursuant to regulation 13 of the Occupational Safety and Health (Safety and Health Committee) Regulations 1996:

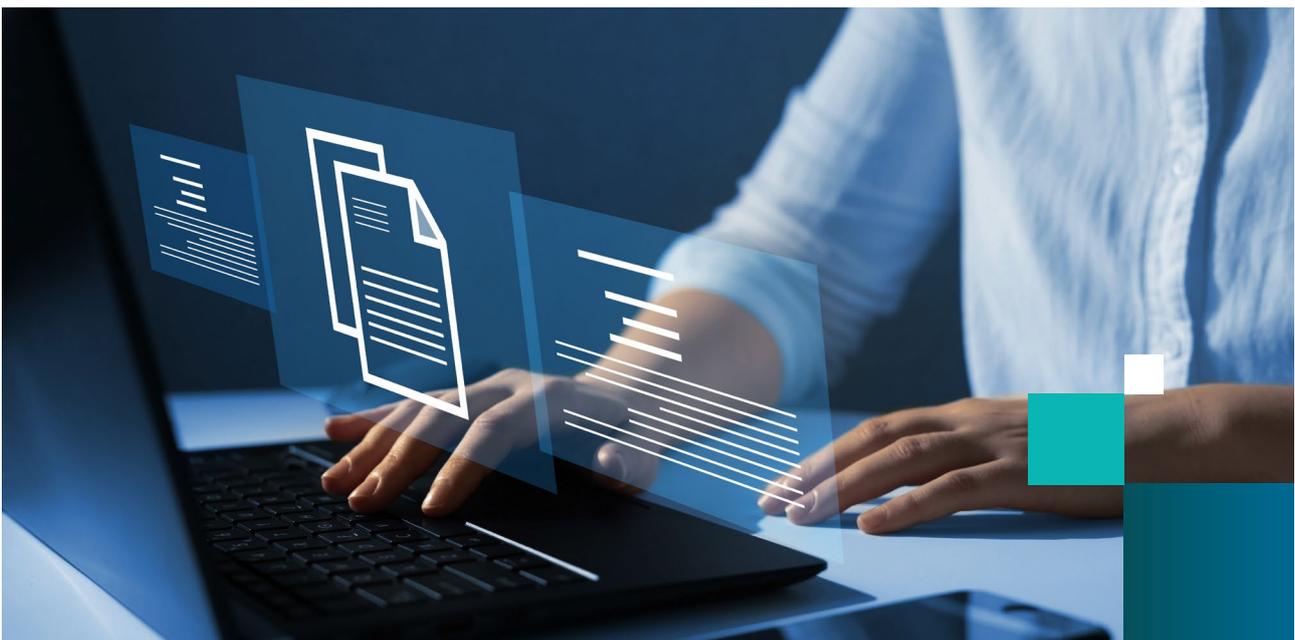
- i. A safety and health committee shall inspect the place of work, as soon as it is safe to do so, after any accident, near-miss accident, dangerous occurrence, occupational poisoning or occupational disease has occurred at the place of work.
- ii. Where a person is employed as a safety and health officer, he shall furnish the chairman of the committee with a report of his findings subsequent to an investigation conducted by him into any accident, near-miss accident, dangerous occurrence, occupational poisoning or occupational disease that has occurred at the place of work, and the chairman shall, as soon as is practicable, convene a meeting of the committee to discuss the report.
- iii. Where no safety and health officer is employed at the place of work, the employer or his authorised manager shall forthwith inform the chairman or the secretary of the committee of any accident, near-miss accident, dangerous occurrence, occupational poisoning or occupational disease that has occurred at the place of work, and the chairman or the secretary shall, as soon as is practicable after the committee has inspected the place of work, convene a meeting to investigate such accident.
- iv. At the meeting of the committee convened under paragraph (ii) or (iii), the committee shall discuss the cause of the accident, near-miss accident, dangerous occurrence, occupational poisoning or occupational disease and make recommendations to the employer of the measures to be taken to prevent the recurrence of such an accident.

e. Investigation report

Pursuant to regulation 14 of the Occupational Safety and Health (Safety and Health Committee) Regulations 1996, actions to be taken on the report and recommendation of the committee are:

- i. A safety and health officer, or, if no person is appointed as such, the chairman, shall, upon a report or recommendations being made under subregulation 13(4), furnish the same to the employer or his authorised manager.
- ii. An employer or his authorised manager shall, as soon as is practicable, upon receiving the report or recommendations under paragraph (i), discuss the report or recommendations with the safety and health officer or the chairman, as the case may be, and the safety and health officer or the chairman shall record in the report the employer's or his authorised manager's decision thereon and shall direct any person employed at the place of work to take such action as the employer or his authorised manager deems necessary in the interest of the safety and health of persons employed therein.

- iii. The investigation report should include, but is not limited to, the following background information related to the incident:
- Personal data of the injured person or victim;
 - Personal data of any witnesses;
 - Detail description of the accident;
 - Chronological sequence of event leading up and during the accident;
 - Investigation findings, including relevant facts and observations;
 - Root cause analysis identifying underlying factors contributing to the incident;
 - Control and remedial measures proposed or implemented to prevent recurrence;
 - Evaluation of potential losses, including human, environmental, and property impacts.
- f. Follow-up action and record keeping
- i. The employer should ensure that all findings, corrective actions, and relevant documentation from the investigation are properly recorded and retained for reference, audit, and continuous improvement purposes.
- ii. The employer shall, without undue delay, implement any corrective action necessary to prevent the recurrence of similar accidents or incidents.
- iii. The employer shall provide a copy of the investigation report to the safety and health committee or representative, as applicable, and forward a copy to the nearest DOSH office and any other relevant authority and statutory body, where required.



3.0

Occupational Safety and Health Management



3.1 Occupational Safety and Health Program

- a. Employers should establish and maintain an Occupational Safety and Health Program (OSH Program).
- b. The OSH Program should be documented in writing and designed to prevent injuries and occupational diseases. The program should include the following component:
 - i. provision for the regular inspection of the premises, plant, and substance, including equipment, work methods, and work practices, at appropriate intervals, ensuring that any identified hazards are promptly addressed and corrective actions are taken without delay;
 - ii. provision of appropriate written instructions, readily accessible to all employees, to supplement and support compliance with the requirements of the Act;
 - iii. maintenance of records and statistics, including inspection reports, accident investigations findings, and regular calculation of injury and incident rates;
 - iv. provision for conducting regular management meetings to review safety and health activities, analyse incident and accident trends, and determine appropriate actions for improvement and risk mitigation;
 - v. provision for the prompt investigation of all incidents to identify root causes and implement corrective measures to prevent recurrence;
 - vi. provision for the effective instruction, training, and supervision of employees to ensure the safe performance of their work;
 - vii. provision for the adequate supply and maintenance of first aid equipment and service;
 - viii. provision for the supply, proper use, and regular maintenance of adequate personal protective equipment (PPE);
 - ix. provision for the safe transportation, handling, usage, and disposal of hazardous chemicals; and
 - x. provision for annual review of the written OSH Program to evaluate its effectiveness, identify areas for improvement, and ensure ongoing adequacy and relevance.

3.2 Traffic Management Plan

- a. The employer should develop a written Traffic Management Plan (TMP) and ensure compliance with the relevant standards and legislations in Malaysia.
- b. As part of the TMP, the employer should develop a site-specific TMP that addresses all aspects of traffic management and safety.
- c. The TMP should include, but is not limited to, the following elements:
 - i. the extent of the works and site affected by the TMP;
 - ii. drawings showing all proposed staging and changes to signage, pavement markings, and traffic control devices required to manage traffic and warn road users;
 - iii. a proposed timetable for implementing each stage of the TMP;
 - iv. the process for reviewing and regularly updating the TMP;
 - v. a checklist of relevant standards and legislative requirements;
 - vi. arrangements for informing road users through signage and other forms of communication—about ongoing disruptions, alternative arrangements, and associated timeframes;
 - vii. procedures and responsibilities for the development, implementation, verification, and continuous monitoring of traffic plans, including any necessary changes;
 - viii. a site induction and training plan to ensure that all relevant employees are aware of the TMP requirements and that personnel involved in traffic management are appropriately trained, competent, and supervised;
 - ix. requirements and controls regarding the competency of employees involved in traffic management;
 - x. emergency contact details (including emergency authorities and other relevant agencies) and procedures for ensuring after-hours site attendance in case of emergency;
 - xi. procedure for inspections, testing and maintenance of the vehicles or transportation used by employees; and
 - xii. speed limits and speed control measures for the road users or disciplinary action for non-compliance.

3.3 Occupational Safety and Health Training

- a. The employer shall be responsible for ensuring the safety and health of all employees and shall provide necessary training for employees to perform their respective tasks. As part of this commitment, the safety and health program should include a comprehensive occupational safety and health training (OSH Training) plan.
- b. The OSH Training plan should also include a training register that documents the skills, qualifications, and certifications of all employees. This includes OSH training, equipment operation training, and any other relevant training required to perform the work safely and effectively.
- c. For high risk works regulated by authorities such as crane operator, scaffolder, excavator operator, and lorry driver, it is the responsibility of the employer to ensure that employees have met all legal requirements prior to commencing work. This includes, but is not limited to, obtaining the necessary licences and certifications, as mandated by the relevant authorities.
- d. The employer should provide a formal safety and health induction course to all employees and other individuals requiring access to the site. These safety and health induction courses should be delivered by appropriately skilled and qualified personnel or by any third party. Completion of the health and safety induction course should be a prerequisite for site access by any person.
- e. The occupational safety and health induction course should be a formal and structured presentation, in the form of a course or study, of the safety and health practices and procedures that all employees must understand and adhere to while at the site.
- f. The employer should maintain all training, induction, and competency records.



3.4 Personal Protective Equipment

- a. The employer shall consider Personal Protective Equipment (PPE) as the last option implemented only when other, more effective control measures are not practical or as a complement to other controls when they are insufficient.
- b. The employer shall provide the required PPE at no cost to the employees and other authorised persons accessing the site.
- c. The Issuance and use of PPE shall comply with all relevant regulations, including but not limited to;
 - i. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000;
 - ii. Occupational Safety and Health (Noise Exposure) Regulations 2019.
- d. PPE shall comply with the recognised standards and approved by DOSH.
- e. PPE shall be maintained in good working condition at all times and shall be replaced when found to be damaged or no longer effective.
- f. PPE shall not be used beyond the service life or duration specified by the manufacturer.



- g. The employer shall provide employees with appropriate training in the correct use of all relevant PPE.
- h. The employer shall implement and maintain a PPE program at the workplace, which includes procedures for issuance, maintenance, inspection, training, and record keeping of the PPE.
- i. The employer shall ensure that employees use PPE correctly and in accordance with established procedures.
- j. PPE provided by the employer should include, but not be limited to the following:
 - i. Head protection
 - ii. Foot protection
 - iii. Eye protection
 - iv. Hearing protection
 - v. Hand protection
 - vi. Respiratory protection equipment
 - vii. Fall protection
 - viii. Safety reflector vest
- k. The employer shall also comply with PPE requirements issued by the authorities such as the PPE mandate for pandemics, epidemics, or specific work activities such as PPE used during working in the confined space.



3.5 Emergency Response and Preparedness

- a. The employer shall ensure the capability to respond effectively at any time to hazards, accidents, and emergency situations. The employer shall proactively identify potential emergency situations and implement appropriate Emergency Response and Preparedness (ERP) measures to ensure a timely and efficient response, with the goal of preventing or mitigating associated risks and impacts.
- b. The employer shall develop written emergency procedures that clearly outline the identified risks and the actions to be taken for emergency response, rescue, and evacuation. These procedures should identify potential emergency situations that may impact safety and health, including those associated with specific activities, equipment, or workplaces under both routine and non-routine operations.
- c. The employer should establish an Emergency Response Team (ERT) to manage and respond to all types of emergencies. Specific responsibilities should be assigned to ERT members to ensure comprehensive coverage of potential emergency situations. All ERT members should undergo appropriate training, obtain relevant certification, and be fully familiar with the established emergency procedures.
- d. The emergency procedures to be developed should include, but not be limited to, the following:
 - i. clear instructions and guidelines for emergency response action;
 - ii. emergency communication instructions for internal site personnel and external agencies or responders;
 - iii. up-to-date emergency contact information for key personnel and external emergency services;
 - iv. a list and description of available emergency equipment and external support resources;
 - v. the composition, roles, and responsibilities of individuals assigned to manage emergency situations;
 - vi. specific procedures for responding to various types of accidents or potential hazards, including steps to regain control of the situation;
 - vii. defined lines of communication and procedures for reporting during and after emergencies.
- e. The emergency procedures should be reviewed and tested, so far as is practicable, to ensure effectiveness. They should be reviewed as necessary, particularly following the occurrence of accidents or emergency situations. Regular emergency drills and exercises should be conducted and properly documented.
- f. The employer should provide emergency response equipment necessary for the prevention, detection, mitigation, recovery, and rescue during emergency situations. This includes PPE and other safety equipment relevant to specific working areas and types of work performed by employees and other personnel on-site.

4.0

General Safety and Health Requirements and Practices





4.1 First Aid

- a. The employer should appoint a qualified first aider.
- b. The employer should provide appropriate first aid facilities, including first aid kits, first aid room, and equipment such as stretchers, etc based on the number of employees and the level of the risk at the workplace.
- c. All first aid facilities should be kept clean, dry, and readily available for immediate use.
- d. Every employee should be informed of the location of the first aid facilities.
- e. The employer should maintain records of all injuries and diseases reported or treated at the workplace.
- f. The employer should establish procedures for transporting injured employees to first aid facilities.
- g. If water transport is necessary, a suitable boat should be readily available during work operations.

4.2 Protection Against Fire

The employer should take adequate precautions to prevent and control risk of fire in the workplace. Appropriate firefighting equipment and procedures should be provided, maintained in good working condition, and made readily accessible. Employees who may be required to use such equipment should receive proper training to ensure safe and effective use. In addition, clearly marked and unobstructed escape routes should be provided and maintained to ensure safe evacuation in the event of a fire.

4.3 Mining Heavy Machinery and Vehicle Provision

- a. All heavy machinery (e.g., excavators, articulated dump trucks, bulldozers, drilling machines, etc.) and light vehicles (e.g., four-wheel drives) should be inspected and tested before being operated at the mining site.
- b. The employer should keep all the maintenance records of machinery for reference.
- c. Only authorised employees are permitted to operate heavy machinery and light vehicles. Employees are strictly prohibited to operate heavy machinery or vehicles under the influence of drugs or alcohol.
- d. The authorised employees should ensure all critical parts of the heavy machinery are in good working condition by conducting a visual inspection and testing before operation.
- e. The authorised employees should ensure that the headlamp, signal lights, brake lights, reverse lights, and horn are present and in good working condition.
- f. Good housekeeping should be practiced for the machineries cabin to ensure the cleanliness and tidiness.
- g. Heavy machinery for carrying coal and excavated materials should be clean, well maintained, and in good working condition.
- h. Observe all road safety signage, maintain a safe distance from heavy machinery or vehicles ahead, and do not exceed the speed limit. Reduce speed when operating the heavy machinery during rainy conditions.
- i. Heavy machinery should not be loaded beyond authorised load limits, and all loose materials should be properly secured.
- j. Avoid overloading heavy machinery that carries coal to ensure no spillage occurs. Any coal spilled on the public road must be immediately removed by the employer.
- k. In the event of an emergency or breakdown of heavy machinery on the road, employees are required to place proper safety signage as a warning to other road users.
- l. The employer should prepare and implement a safe work procedure to operate heavy machinery.
- m. All work involving the use of heavy machinery near underground and above utilities services (e.g. electric overhead lines, underground cable etc.) shall comply with the following conditions:
 - i. Employees shall ensure that the heavy machinery is maintained at the recommended safe working distance.
 - ii. A safe work zone shall be established around the utilities services installation.
 - iii. The perimeter of the work zone and the structure should be barricaded.
 - iv. When maintaining the minimum safe working distance is not feasible, the employer should engage the relevant authority.

4.4 Adverse Weather Conditions

- a. Adverse weather conditions include, but are not limited to, thunderstorms, high winds, heavy rain, lightning, and waves.
- b. Personnel are prohibited from performing any outside work during adverse weather conditions at the site.

4.5 Sanitary and Hygiene Requirements and Disease Prevention

- a. The employer shall comply with all applicable rules, regulations, and instructions issued by the relevant authorities regarding sanitary and hygiene requirements in the execution of the works.
- b. The employer shall implement educational and awareness campaign programs covering topics such as sanitation and hygiene practices and prevention of contagious and sexually transmitted infections (STIs).
- c. In the event of an outbreak of any disease of an epidemic nature, the employer shall promptly notify the relevant authority and shall adhere to any directives or orders issued by local, national, or international health authorities for the prevention and control of such disease.

4.6 Occupational Musculoskeletal Disorders (OMSD)

- a. All work areas should be organised and maintained in a manner that minimises the risk of sprains, strains, and other occupational musculoskeletal injuries and disorders.
- b. Employee shall not be required to lift, carry, or move any load that is likely to cause injury.



4.7 Noise Control and Hearing Conservation Program

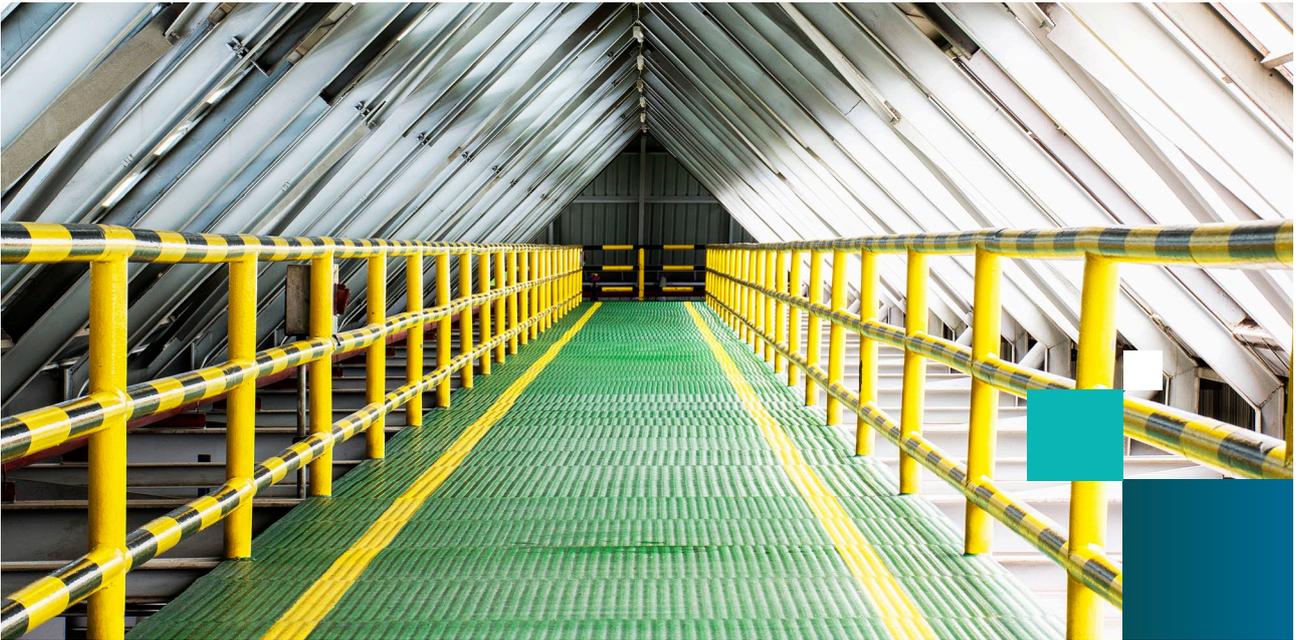
- a. The employer shall comply with the Occupational Safety and Health (Noise Exposure) Regulations 2019.
- b. With regard to noise exposure limits, the employer shall ensure that no personnel are exposed to:
 - i. a daily noise exposure level exceeding 85 dB(A) or daily personal noise dose exceeding 100%;
 - ii. a maximum sound pressure level exceeding 115 dB(A) at any time; or
 - iii. a peak sound pressure level exceeding 140 dB(C).
- c. Where personnel are exposed to noise levels exceeding the limits stated above, the employer shall implement appropriate control measures by way of engineering control, administrative control, or the provision of approved hearing protection.
- d. If noise levels in the workplace exceed excessive noise, the employer needs to identify potential noise-exposed areas and measure the noise exposure level. Where practicable, provide engineered noise control, install signage of noise hazard areas, provide suitable hearing protection devices, conduct hearing tests, and provide employees training on the noise hazards in the workplace.

4.8 Public Safety

- a. Unauthorised people shall not be permitted to enter the mining site. The employer should install an appropriate signage with “No Unauthorised Personnel Allowed” at the main entrance and other suitable locations to prevent public access.
- b. Employer shall ensure all individuals entering the site must report to the designated person in charge to obtain permission and receive further instruction.
- c. A qualified signalman should be assigned for traffic control whenever work activities involve the use of public roads.
- d. The site gate should always remain closed outside of working hours to prevent unauthorised entrance.

4.9 Safe Work Areas

Work areas should be arranged to allow safe movement of people, equipment, and materials, minimising the risk of injury or obstruction.



4.10 Guardrails

Guardrails or other suitable barriers should be installed where there is a risk of falling or similar hazard.

4.11 Maintenance of Clean Facilities

All workplaces should be maintained in a clean condition to ensure a safe and healthy working environment.

4.12 Ventilation

Effective ventilation should be provided and maintained in all workplaces to ensure adequate air quality and control of airborne contaminants.

4.13 Temperature

Where practicable, provision should be made to maintain workplace temperature at levels that ensure reasonably comfortable conditions for employees.

4.14 Illumination

All work areas should be provided with adequate lighting appropriate to the nature of the tasks performed in the work area.

4.15 Suitable Welfare Facilities

Appropriate welfare facilities should be provided and maintained at all workplaces.

4.16 Workplace Flooring and Hazard Prevention

- a. Floors, platforms, ramps, stairs, and walkways used by employees should be maintained in good repair and kept free of slipping and tripping risk.
- b. If a work process causes liquids to accumulate on the floor and creates a slipping or other risk, drains or other suitable control measures should be used to control the risk.
- c. Spills and waste material that may pose tripping risk to employees should not be allowed to accumulate and should be promptly cleaned and removed.

4.17 Electrical Equipment

- a. Any employee who installs, alters, or maintains electrical equipment should be qualified to perform such work.
- b. All electrical installations shall be properly grounded in accordance with applicable standards and safety legislations.



4.18 De-energisation

- a. Maintenance and repair of machinery or equipment should only be performed once the power source has been completely turned off, de-energised, and properly secured to prevent unexpected start-up.
- b. Where it is essential for equipment to remain operational during maintenance, a procedure should be established to prevent injury from contact with moving or energised parts, and employees should be trained on these procedures.

4.19 Maintenance of Plant

- a. The employer should ensure all machineries and equipment are capable of safely perform to its intended functions. Additionally, the equipment should be operated in accordance with the manufacturer's recommendations, instructions, and established safe work procedures.
- b. Machineries and equipment should be inspected, tested and maintained at the intervals specified by the manufacturer.
- c. Any unsafe machineries or equipment should be clearly marked to prevent it from being used.

4.20 Authorisation to Operate

- a. Only authorised employee are permitted to operate machineries or equipment.
- b. Employees are not authorised to operate machineries or equipment until they have received adequate instruction and training.

4.21 Workplace Inspections

- a. The employer should ensure that regular inspections are conducted to workplaces, including relevant structures such as grounds, excavations, equipment, machineries etc. These inspections should be carried out at intervals to prevent unsafe working conditions.
- b. Machineries and equipment should be inspected in accordance with the manufacturer's recommendations.

4.22 Maintenance of Buildings and Structures

The employer should ensure that both buildings and temporary or permanent structures within their undertaking are safe to be used.

4.23 Guarding of Machinery and Equipment

- a. The employer should ensure that machinery and equipment are equipped with adequate safeguards that:
 - i. protect employees from in contact with hazardous parts;
 - ii. prevent employees from exposure to hazardous operation points, and
 - iii. safely contain any material ejected by the work process that could pose a hazard to the employee.
- b. After servicing, adjustment, or parts replacement, all machinery guards should be reinstalled to the original position.
- c. Machinery guards should not be removed unless absolutely necessary.
- d. If removal of a machinery guard is required for repair, adjustment, or parts replacement, the machinery must be isolated from its energy source to prevent unintended movement.
- e. Perform a visual inspection before operating the machinery to ensure that the guards are properly in place.

4.24 Operating Controls

- a. Powered equipment, excluding portable powered tools and mobile equipment, should be equipped with:
 - i. start and stop controls that are easily accessible to the employee;
 - ii. clearly labelled controls and switches indicating their functions; and
 - iii. controls that are positioned or shielded to prevent unintentional activation.
- b. Portable powered tools and mobile equipment should have operating controls that conform to applicable and appropriate standards. and mobile equipment should have operating controls that conform to applicable and appropriate standards.



4.25 Chemical Hazardous to Health

- a. The employer shall not carry out any work that may expose, or is likely to expose, employees to chemicals hazardous to health unless a risk assessment has been conducted to evaluate the potential health risks posed by the chemical.
- b. The employer shall ensure that the identity of each substance, its potential safety and health effects, and the necessary safety precautions are clearly communicated through labels, Safety Data Sheets (SDS), placards, warning signs, tags, or other similar means.
- c. The employer shall develop and implement written procedures for the safe handling, use, storage, and disposal of chemical hazardous to health. These procedures should include measures to prevent exposure through any route that could result in adverse health effects, as well as emergency response and cleanup procedures in the event of a spill or release.
- d. Employees shall be trained in, and adhere to, established procedures for the safe handling, use, storage, and disposal of the chemicals and hazardous substances, including emergency response and cleanup procedures for spills or releases.

4.26 Emergency Shower Facilities

The employer should ensure that appropriate emergency shower facilities are available in any work area where employees may be exposed to harmful, corrosive, or irritant materials, or materials that could cause burns or other injuries. These facilities should be provided in any situation where immediate washing may be required to prevent harm.

4.27 Working Near or Over Water

- a. The employer shall carry out a risk assessment for any work conducted near or over water and ensure that appropriate control measures are incorporated into the method statement and should be continuously monitored.
- b. All personnel working in such areas should wear a Personal Flotation Device (PFD) or life jacket on top of other required PPE at all times while near or over water.

4.28 Material Storage

- a. Material supplies and equipment should be placed, stacked, and stored in a stable and secure manner to prevent displacement or collapse.
- b. Where necessary, stacked material or containers should be stabilised using interlocking, strapping, or other effective means to prevent them from becoming a hazard to employees.
- c. The employer should ensure that the ground conditions are suitable for storing heavy or bulk material. The designated storage area should be fenced and/or guarded to restrict unauthorised access and enhance safety.

4.29 Flammable Substances

All sources of ignition shall be eliminated or effectively controlled whenever flammable gas or liquid is handled, used, or stored to prevent the risk of fire or explosion.



4.30 Handling Gas Cylinders

- a. Compressed gas cylinders should not be subjected to impact or used as rollers or work supports.
- b. Compressed gas cylinders should be properly secured to prevent falling or rolling during storage, transportation, and use. Where practicable, cylinders should always be kept in an upright position.

4.31 Hot Work Activities

Hot work activities such as welding and cutting is inherently hazardous and poses a significant risk of fire and explosion. To minimise these risks, hot work must only be carried out in the designated areas specifically prepared for such activities.

4.31.1 Gas Welding and Cutting

The following requirements must be followed when performing gas welding and cutting activities:

- a. Welding and cutting activities shall not be conducted near flammable materials.
- b. A portable fire extinguisher must be readily available at the worksite.



- c. A thorough inspection of welding equipment, including gas cylinders, hoses, gauges, fittings, and flashback arresters, must be conducted before starting the task to ensure all components are in safe working condition.
- d. Gas cylinders should always be in the upright position and securely fastened to prevent tipping or falling.
- e. Welders shall wear appropriate PPE, including a face shield, welding/leather gloves, a welding apron, and an appropriate mask if required.
- f. A safe work procedure shall be established and complied with. The work area must be clearly demarcated using safety tape or barriers to prevent unauthorised personnel from entering.

4.31.2 Oxy-Acetylene Handling and Use

The following requirements must be followed when storing oxy-acetylene cylinders:

- a. Cylinders must be stored upright and securely fastened using racks, clamps, or straps. Valve guards or caps, if provided, must remain in place at all times.
- b. Fire extinguishers must be placed in a readily accessible location near the storage area.
- c. Cylinders must be regularly inspected for overall condition and checked for leaks.
- d. Only trained and authorised personnel are permitted to handle and use gas cylinders.
- e. Cylinders must be stored either in the open areas or in enclosed spaces, depending on the site location.

The following additional precautions apply:

- a. Storage in open areas:
 - i. The storage area must be used exclusively for storing gases and must be clearly labelled with the types of gas cylinders it contains (e.g., oxygen, acetylene).
 - ii. The area must be well ventilated.
 - iii. The area must be located away from risk of fire and sources of heat. Acetylene cylinders must also be kept clear from any potential sources of ignition.
 - iv. The area must be designated as a “No Smoking Area”; smoking and the use of open flames in or near the storage area must be strictly prohibited.

- b. Storage in closed rooms:
 - i. The room must be used exclusively for storing gases and must be clearly labelled with the types of gas cylinders it contains (e.g., oxygen, acetylene).
 - ii. The room must be well ventilated either through natural means or a forced ventilation system.
 - iii. The room must be designated as a “No Smoking Area”; smoking and the use of open flames must be strictly prohibited. Acetylene and oxygen cylinders must be stored in two separate rooms—one designated for acetylene and the other for oxygen—to prevent the risk of cross-contamination or fire.

4.32 Radiation Safety

- a. The employer shall establish and maintain a strict measures to prevent and control exposure to radiation present on the site in accordance with the requirements of the relevant authority or statutory body.
- b. The employer shall maintain up-to-date records of personnel and radiation sources to ensure that valid permits and authorisations for the movement, installation, and handling of radiation sources are in place at all times, in compliance with relevant legislations.

4.33 Signage, Notification, and Barriers

- a. Appropriate safety and health signage, including but not limited to road safety signs and PPE requirements, should be installed throughout the mining site to ensure visibility and awareness of hazards.
- b. All signages and physical barriers must be regularly inspected to ensure they are in good condition, clearly visible, and clean at all times.

4.34 Night Operation

- a. The employer should develop and implement a safe working procedure for night operation to ensure safety and operational efficiency.
- b. Adequate lighting should be provided throughout the worksite. Employer should ensure that all heavy equipment is fitted with a functional lighting system and that it is in proper working condition.
- c. All employees should be familiar with the designated loading and dumping points as well as the safe routes to access them.

4.35 Working at Height

- a. All employees involved in working at height must receive appropriate training for such tasks.
- b. A risk assessment must be conducted prior to commencing the work, and all control measures specified must be strictly followed.
- c. Ladders must be properly set up and used, ensuring padding where necessary, secure footing, and the correct inclination angle.
- d. The “three points contact” method must be practiced at all times when ascending or descending a ladder.
- e. All equipment, such as ladders and full-body harnesses, must be inspected before use to ensure it is in safe working condition.
- f. Employees must always be tied off using an appropriate fall arrest system when working at height.
- g. To prevent dropped objects, all material and tools must be properly secured using taglines or other suitable methods.



5.0

Risk Management for Surface and Underground Coal Mining



5.1 Land Clearing



a. Hazard Description

Falling trees and unstable ground conditions which can lead to serious injury, entrapment, or equipment instability if not properly managed.

b. Risk Assessment

Risk assessment on site should consider:

- i. The ground condition which may pose stability, access, and environmental hazards.
- ii. Diversities of tree species, which may impact visibility, access, and the safety of clearing activities.

c. Control Strategies

The employer must:

- i. ensure the clearing activities are conducted in accordance with an approved plan;
- ii. ensure to maintain records of all the clearing activities, including machinery used and cleared area;
- iii. ensure that employees are properly trained in the safe operation of machinery and equipment use on-site;
- iv. provide appropriate personal protective (PPE) and ensure it is properly worn and used at all times in the workplace;
- v. verify that all machinery and equipment are regularly inspected and maintained in good working condition; and
- vi. assign a safety personal or supervisor to continuously monitor the clearing activities for compliance and safety; and
- vii. ensure that employees comply with all relevant mining legislations.

The employees must:

- i. comply with the applicable mining legislations;
- ii. properly use or wear the PPE provided by the employer; and
- iii. use or operate equipment or machinery, or perform any work, in a manner that may not endanger themselves or others.

5.2 Trees Cutting



a. Hazard Description

Risk of falling trees and unexpected encounters with wildlife, which may approach from any direction.

b. Risk Assessment

Risk assessment on site should consider the presence of endangered tree species and wild animal.

c. Control Strategies

The employer must:

- i. ensure the tree-cutting activities are conducted in accordance with an approved plan;
- ii. ensure to maintain records of all the cutting activities, include details of machinery used;
- iii. provide PPE and ensure it is properly worn and used at all times in the workplace;
- iv. verify that all machinery and equipment are regularly inspected and maintained in good working condition; and
- v. assign safety personnel or a supervisor to continuously monitor the cutting activities for compliance and safety.
- vi. takes every precaution reasonable in the circumstances for the protection of employees;
- vii. ensure that employees comply with all mining legislations; and
- viii. ensure that employees use all required equipment, protective devices or clothing provided by the employer, including high-visibility safety apparel.

The employees must:

- i. comply with applicable mining legislation;
- ii. properly use or wear the personal PPE provided by the employer; and
- iii. use or operate equipment or machinery, or perform any work, in a manner that may not endanger themselves or others.

5.3 Mine Site Haul Road



a. Hazard Description

Risks of accidents include vehicle-to-vehicle collisions and self-accidents involving loss of control, rollovers, or impact with roadside hazards.

b. Risk Assessment

Risk assessment shall be conducted to identify potential hazards present on-site, such as poor visibility, road conditions, and driver fatigue.

c. Control Strategies

The employer must:

- i. develop and maintain a written TMP in consultation with the safety and health committee (if applicable) and review the TMP as necessarily to ensure its effectiveness and relevance;
- ii. ensure all activities are conducted according in accordance with to an approved plan by the relevant authority;
- iii. maintain records of all activities and machinery used;
- iv. engage competent and trained personnel to operate machinery and equipment in the workplace;
- v. provide appropriate PPE and ensure it is correctly worn at all times at the workplace;
- vi. verify that all machinery and equipment are regularly inspected and maintained in good working condition;
- vii. assign a safety personal or supervisor to continuously monitor the activity during the project;
- viii. ensure that any workplace accidents are properly recorded and reported in accordance with legislations requirement;
- ix. ensure all vehicle or equipment on site must be operated by trained and authorized personnel; and
- x. install appropriate measures (e.g. convex mirrors, safety poles and adequate tower lighting) to enhance visibility.

The employees must:

- i. strictly adhere to mine site's traffic rules;
- ii. exercise extra caution when navigating narrow roads, steep gradients, switchbacks, intersections, and corners;
- iii. maintain a safe distance between light vehicles and heavy equipment at all times;
- iv. keep an appropriate distance behind trucks and increase caution in adverse conditions such as wet, slippery, or dusty roads.

5.4 Mining Vehicle and Equipment Parking



a. Hazard Description

Employees are at risk of serious injury or fatality due to hazards associated with vehicles and mobile equipment at mines in mining operations. Common equipment includes haul trucks, loaders, and excavators.

b. Risk Assessment

Risk assessment shall be conducted to identify potential hazards present on-site, such as limited visibility.

c. Control Strategies

The employer must:

- i. provide employees with necessary information, instruction, and supervision to protect their safety and health. This includes training vehicle operators and employees working near vehicles on the workplace's rules for safe operation of vehicles;
- ii. ensure that all equipment and protective devices are regularly inspect, maintained, and kept in good condition;
- iii. protect the safety and health of employees who may be at risk due to the movement of vehicles and mining equipment on site;
- iv. ensure that vehicles and mining equipment are operated only by trained personnel except during training or testing under supervision;
- v. ensure that employees comply with all mining legislations; and
- vi. ensure that employees use all required equipment and protective devices.

The employees must:

- i. report any traffic-related hazards, as well as any observed contraventions of safety regulations, to their supervisor or employer without delay;
- ii. work in full compliance with applicable mining regulation;
- iii. properly use or wear the personal PPE provided by the employer; and
- iv. use or operate equipment or machinery, or perform any work, in a manner that may not endanger themselves or others.

5.5 Overburden Stripping and Coal Excavation



a. Hazard Description

- i. Employees are at risk of being struck or crushed by equipment operating too close to the edge of an excavation or by soil, rock, or debris that has been improperly placed or stored near the edge.
- ii. Employees are at risk of falling into the open trenches or excavations, especially when edges are not properly marked, barricaded, or illuminated.
- iii. Water accumulation may flood the excavation area, which can undermine ground stability.
- iv. Employees may be exposed to hazardous atmospheres such as coal dust or gases, posing respiratory risks.
- v. Employees may slip, trip, and fall, particularly while mounting or dismounting equipment or using unsafe access points.

b. Risk Assessment

Before beginning any excavation or related work, the employer is responsible for identifying all potential hazards and assessing associated risks. The process must include, but is not limited to, the following steps:

- i. Plan and organise the work site layout, including maintaining good housekeeping by placing excavated material, tools, and debris at a safe distance from the trench or excavation edge.
- ii. Remove accumulated water from the excavation using pumps or drainage systems to prevent flooding, wall collapse, and risk of slip.

c. Control Strategies

The employer must:

- i. engage or appoint trained personnel to operate heavy machinery in the workplace;
- ii. ensure that all heavy machinery is consistently inspected and maintained in good working condition;
- iii. provide appropriate PPE and ensure it is correctly worn at all times at the workplace;
- iv. assign a safety personal or supervisor to continuously monitor the activity;
- v. ensure that employees comply with all mining regulations; and
- vi. inform employees of any potential hazards they are aware of.

The employees must:

- i. report any excavation-related hazards, as well as any observed contraventions of safety regulations, to their supervisor or employer without delay;
- ii. work in full compliance with applicable mining legislation;
- iii. properly use or wear the personal PPE provided by the employer; and
- iv. use or operate equipment or machinery, or perform any work, in a manner that may not endanger themselves or others.



5.6 Dewatering Pump Operation



a. Hazard Description

- i. Excessive or uncontrolled removal of groundwater can lead to ground instability or subsidence.
- ii. Pump failure during operation will lead to rapid water accumulation in excavated areas, increasing the risk of flooding, slips, and collapse of trench walls.

b. Risk Assessment

Risk assessment shall be conducted to identify potential hazards present in pump operation. This includes but is not limited to:

- i. Assessing the volume of water entering the active mine site;
- ii. Evaluating surrounding ground conditions in both wet and dry conditions;
- iii. Planning the dewatering operation in accordance with approval from the relevant authority.

c. Control Strategies

The employer must:

- i. ensure pump operator receive relevant training to safely operate the equipment;
- ii. ensure all machinery and equipment are in good condition;
- iii. provide and enforce the use of PPE at the workplace;
- iv. assign a qualified person in charge for pump maintenance;
- v. implement a scheduled maintenance and inspection program;
- vi. takes every precaution reasonable in the circumstances for the protection of employees;
- vii. ensure that employees comply with all mining legislation;
- viii. ensure pump operation is recorded; and
- ix. inform employees of any potential hazards they are aware of.

The employees must:

- i. reports any hazards to their supervisor or employer;
- ii. work in full compliance with applicable mining legislation;
- iii. Inform supervisor if unplanned maintenance is required;
- iv. properly use or wear the PPE provided by the employer; and
- v. use or operate equipment or machinery, or perform any work, in a manner that may not endanger themselves or others.

5.7 Drilling Activity

a. Hazard Description

Drilling activities present various hazards during both the preparation phase (such as work sites and drill pads) and the actual operation of drill rigs. Examples of hazards are:

- i. Mechanical hazards, such as rotating and moving part of machinery.
- ii. High-pressure systems, such as hydraulic lines.
- iii. Chemical exposure, such as drilling fluids or fuel.
- iv. Noise and vibration, such as from diesel engines and drilling.
- v. Fire and explosion risks, such as from flammable gases.

b. Risk Assessment

Risk assessment shall be conducted to identify potential hazards present in drilling activity.

c. Control Strategies

The employer must:

- i. conduct risk assessment and identify potential hazards in drilling operation;
- ii. make mandatory the use of PPE provided to employees for drilling activities;
- iii. conduct daily inspection to ensure drilling machine is in good condition and properly maintained;
- iv. assign a well-trained team to operate and maintain the drilling machine;
- v. handle the drilling equipment in accordance with manufacturer's instructions; and
- vi. relocate the drilling machine to a designated safe area.

The employees must:

- i. reports any hazards to their supervisor or employer;
- ii. work in full compliance with applicable mining legislation;
- iii. Inform supervisor if unplanned maintenance is required;
- iv. properly use or wear the PPE provided by the employer; and
- v. use or operate equipment or machinery, or perform any work, in a manner that may not endanger themselves or others.

5.8 Explosives Handling, Storage, and Transportation

a. Hazard Description

- i. The handling and use of explosives present significant hazards due to the potential of uncontrolled release of stored energy.
- ii. These hazards are often not immediately apparent and can be underestimated or unrecognised during operation.
- iii. These unwanted events can result in damage to equipment and infrastructure, release of shrapnel and serious injury, or, in the worst-case scenario, fatality.

b. Risk Assessment

Risk assessment shall be conducted to identify potential hazards present in explosive handling. These include but are not limited to:

- i. Risks associated with transporting, storing, and using explosives
- ii. Effective control measures for explosive hazards.

c. Control Strategies

- i. The use of authorised explosives must comply with all relevant legislations, which include:
 - Applicable states law or ordinance related to mining, depending on the location of the operation.
 - State-specific mining legislations such as the Sarawak Mineral Ordinance 2004.
 - The Mineral Development Act 1994 and its related regulations.
 - The Explosives Act 1957 and the Explosives Rules 1923, which fall under the jurisdiction of the Royal Malaysian Police.
- ii. Both the permit and license must be obtained from the relevant authorities prior to the purchase, transport, and the use of explosives at any blasting site.

5.8.1 Storage and Transportation of Explosive

The employer must:

- i. comply with the Occupational Safety and Health (Control of Industrial Major Accident Hazards) Regulations 1996 if the quantity of explosives stored on-site (in a licensed magazine) exceeds 10% above the threshold limit specified by the regulations;
- ii. ensure all blasting operations—including storage, transport, and handling of explosives—are carried out in full compliance with the Mineral Development (Blasting) Regulation 2013, the conditions outlined in the Approval Letter of the Operational Mining Scheme, the Explosives Act 1957, and the Explosives Rules 1923;
- iii. ensure only qualified personnel and registered shotfirer are authorized to transport the explosives to and from the blasting site; and
- iv. ensure all employees assigned to handle the explosives to do so under the direct supervision of a registered shotfirer.

5.8.2 Explosives Handling

The employer must:

- i. ensure all explosive-related equipment is located in a designated, isolated, and secure area;
- ii. ensure vehicle used to transport explosives within the mine site is equipped with safety features and maintained in good working condition to ensure secure handling and transportation of explosive materials;
- iii. ensure all explosive handlings activities are closely monitored by registered shortfirer;
- iv. ensure that employees comply with all mining legislations; and
- v. inform employees of any potential hazards they are aware of, which include blasting hazards.

The employees must:

- i. work in full compliance with applicable mining legislations;
- ii. properly use or wear the PPE provided by the employer; and
- iii. use or operate equipment or machinery, or perform any work, in a manner that may not endanger themselves or others.

5.9 Coal Stockpile Management



a. Hazard Description

The hazards are associated with the stockpile management and machine use.

b. Risk Assessment

The employer shall conduct a risk assessment and identify potential hazards on-site.

c. Control Strategies

The employer must:

- i. provide persons working on-site with the information, training, and equipment necessary to ensure their safety;
- ii. prepare and keep up-to-date an adequate on-site emergency plan detailing how accidents will be dealt with; and
- iii. advise employees of the existence of any potential or actual hazards of which the supervisor is aware.

The employees must:

- i. work in compliance with the mine legislation;
- ii. wear the PPE that has been provided by the employer; and
- iii. use or operate equipment or machines or work in a manner that may not endanger self or any other employee.

5.10 Waste Dump



a. Hazard Description

Various hazards are associated with the waste dump sites (e.g. surface water contamination and slope instability).

b. Risk Assessment

The employer shall conduct a risk assessment and identify potential hazards on-site for waste dump area.

c. Control Strategies

The employer must:

- i. ensure the waste dump design follows the approved plan by the relevant authority;
- ii. ensure all machinery and equipment are in good condition;
- iii. ensure PPE is provided;
- iv. ensure safety personnel to monitor and record the activity; and
- v. advise employees of the existence of any potential or actual hazards.

The employees must:

- i. work in compliance with the mine legislation;
- ii. wear the PPE that has been provided by the employer; and
- iii. use or operate equipment or machines or work in a manner that may not endanger self or any other employee.

5.11 Crushing and Processing



a. Hazard Description

Various hazards are associated with coal dust, noise and mining equipment.

b. Risk Assessment

The employer shall conduct a risk assessment and identify potential hazards on-site for crushing and processing activities.

c. Control Strategies

The employer must:

- i. ensure all employees attend and complete the training;
- ii. ensure unauthorized persons are prohibited from entering crushing and processing plant;
- iii. ensure the use of PPE to all employees;
- iv. inform employee of the potential hazards;
- v. ensure good communication between the operation team;
- vi. ensure the cleanliness of the crushing and processing plant is maintained;
- vii. ensure the mechanical and electrical components are in good condition;
- viii. ensure the equipment is run in good and safe condition; and
- ix. ensure employees around the equipment are familiar with and understand the operation of the machine.

The employees must:

- i. attend and completed the training;
- ii. follow safe working procedure;
- iii. wear the appropriate PPE provided by the employer; and
- iv. use or operate equipment or machines or work in a safe manner.

5.12 Delivery and Barging

a. Hazard Description

Various hazards are associated with noise, coal dust and heavy machinery.

b. Risk Assessment

The employer shall conduct a risk assessment and identify potential hazards on-site for delivery and barging.

c. Control Strategies

The employer must:

- i. ensure all delivery machinery are in good condition;
- ii. take reasonable precaution in the circumstances for the protection of employees and public; and
- iii. advise employees of the existence of any potential hazard.

The employee must:

- i. attend and completed the training;
- ii. follow safe working procedure;
- iii. wear the appropriate PPE provided by the employer; and
- iv. use or operate equipment or machines or work in a safe manner.

5.13 Water Management, Erosion, and Sedimentation Control

a. Hazard Description

Various hazards are associated with noise, drowning, machinery, and chemical hazards.

b. Risk Assessment

The employer shall conduct a risk assessment and identify potential hazards on-site for water management, erosion and sedimentation control activities.

c. Control Strategies

The employer must:

- i. implement erosion and sedimentation control measure;
- ii. ensure employees comply with the safe working procedure;
- iii. ensure the use of PPE to all employees; and
- iv. advise employees of potential hazards.

The employee must:

- i. attend and completed the training;
- ii. follow safe working procedure;
- iii. wear the appropriate PPE provided by the employer; and
- iv. use or operate equipment or machines or work in a safe manner.

5.14 Slope Stability



a. Hazard Description

Various hazards are associated with:

- i. geological structures and their influence on slope stability.
- ii. strength of the rock mass.
- iii. rain or water inflow issues.
- iv. surface drainage.
- v. mine dewatering.
- vi. geometry of the pit.
- vii. appropriate drilling and blasting for final slopes.

b. Risk Assessment

The employer shall conduct a risk assessment and identify potential hazards on-site for slope stability activities.

c. Control Strategies

The employer must:

- i. take every precaution reasonable in the circumstances for the protection of employees;
- ii. ensure employees comply with the safe working procedure; and
- iii. Ensure the use of PPE for all employees.

The employees must:

- i. attend and complete the training;
- ii. follow safe working procedure;
- iii. wear the appropriate PPE provided by the employer; and
- iv. use or operate equipment or machines or work in a safe manner.

5.15 Coal Mine Dust Management

a. Hazard Description

Coal dust is released during coal excavation, transportation and crushing which can cause visibility and respiratory issues.

b. Risk Assessment

The employer shall conduct a risk assessment and identify potential hazards on-site for coal dust management.

c. Control Strategies

The employer must:

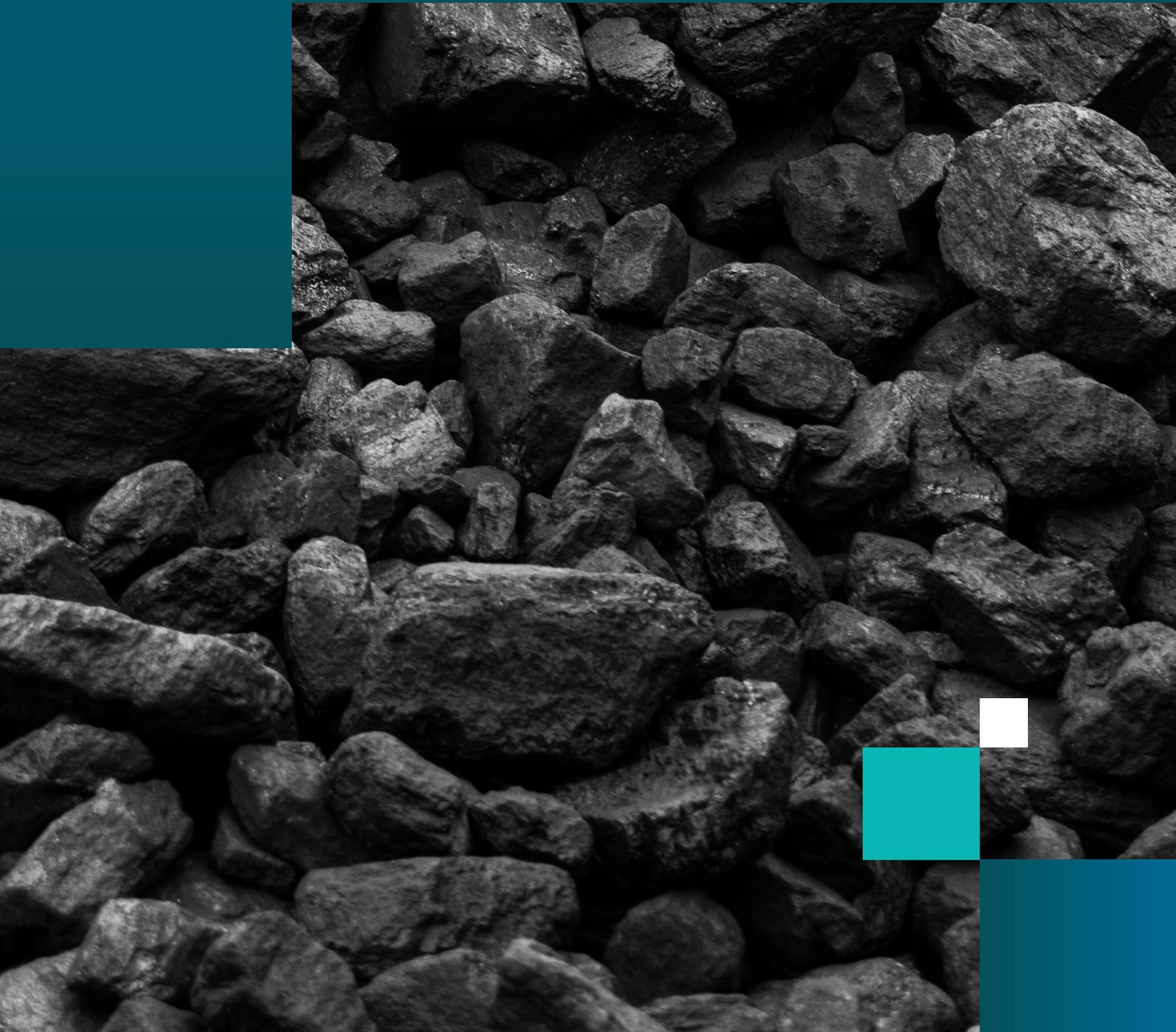
- i. take every precaution reasonable in the circumstances for the protection of employees;
- ii. conduct sampling of air to determine coal dust levels and monitoring the effectiveness of engineering controls such as applying water to control road haulage dust;
- iii. train all employees on the hazards of respirable coal dust, control measures, and proper sampling procedures;
- iv. conduct health screening for all employees;
- v. ensure employees comply with safe working procedure;
- vi. ensure employees use appropriate PPE; and
- vii. advise employees of the existence of any potential hazards.

The employees must:

- i. attend and complete the training;
- ii. follow safe working procedure;
- iii. use or wear the appropriate PPE provided by the employer; and
- iv. use or operate equipment or machines or work in a safe manner.

6.0

Additional Safety Measures for Underground Coal Mining Practices



6.1 Safety Measures

- a. Where employees are liable to be injured by falling or sliding material from the roof, face, or wall of the tunnel, suitable measures such as shoring, spray-creating, use of rock bolts, or other appropriate measures should be taken to ensure the safety of the employees.
- b. The roof, face, and walls of the work area in a tunnel should be examined and tested at the start of each shift and at regular intervals thereafter to ensure that they are safe for the employees.
- c. All work should be adequately illuminated.
- d. Gasoline or liquefied petroleum gases or other highly flammable substances should not be stored or used underground.
- e. Water and sandbags for firefighting should be available throughout the tunnel, and the outlets should be located so as to be readily accessible.
- f. The layout plan should be updated every month and displayed in the active mine area as preparation for evacuation in emergencies.
- g. Tunnels should be mechanically ventilated in all work areas.
- h. The atmosphere in all underground work areas should contain at least 20% oxygen by volume and less than 1.5% of methane gas by volume.
- i. Where there is a possibility of oxygen deficiency, a test for oxygen deficiency should be conducted before each shift in all work areas in the tunnel or shaft. A record of all tests should be maintained and kept available for inspection.
- j. The exposure to airborne contaminants of an employee working underground should not exceed the exposure limits.

7.0

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- iii. Department of Occupational Safety and Health (DOSH), Guidelines for Manual Handling at Workplace 2018.
- iv. Department of Occupational Safety and Health (DOSH), Guidelines on Ergonomic Risk Assessment at Workplace 2017.
- v. Department of Occupational Safety and Health (DOSH), Industry Code of Practice for Management of Occupational Noise Exposure and Hearing Conservation 2019.
- vi. Department of Occupational Safety and Health (DOSH), Occupational Safety and Health (Use and Standard of Exposure of Chemical Hazardous to Health) Regulations 2000.
- vii. Department of Occupational Safety and Health (DOSH), Occupational Safety and Health (Classification, Packaging and Labelling of Hazardous Chemical) Regulations 2000.
- viii. Department of Occupational Safety and Health (DOSH), Guideline on Occupational Safety and Health in Tunnel Construction 1998.
- ix. Department of Occupational Safety and Health (DOSH), Occupational Safety and Health (Noise Exposure) Regulations 2019.

8.0

Appendix



Appendix 1 Self-Assessment Checklist

i. Documentation Inspection

NO	ITEM			
A	POLICY	YES	NO	N/A
1	Formulation of occupational Safety and Health Policy <i>(If 'No': A(2), A(3), A(4) are marked 'No'; If 'N/A': A(2), A(3), A(4) are marked 'N/A')</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Commitment from top management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Communication to all employees and stakeholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Employee involvement / understanding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B	OSH ORGANIZING	YES	NO	N/A
1	Establishment of the Safety and Health Committee (SHC) if there are 40 or more employees <i>(If 'No': 1(a-d) are 'No'; if 'N/A': 1(a-d) are 'N/A')</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	a) Membership	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Regular meetings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Workplace inspection by SHC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d) Investigation of accidents, occupational diseases, dangerous occurrences, occupational poisonings, near misses by SHC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	e) Establishment of SHC or safety and health team if fewer than 40 employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	f) OSH responsibilities clearly stated for all SHC members	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2	Appointment of safety and health officer (SHO) <i>(If 'Yes': item 3 is 'N/A'; if 'No': item 3 becomes 'Yes' or 'No'.)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Appointment of Occupational Safety and Health Coordinator, if 5 or more employees are employed at the workplace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C	OSH TRAINING	YES	NO	N/A
1	Planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Implementation			
	a) Induction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) On-job training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Emergency training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d) Training / Safety briefing to contractors, visitors, and persons other than his employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	e) Machinery management training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	f) Training in the use of personal protective equipment (PPE)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	g) Training for SHC members	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	h) Handling of hazardous chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	i) Noise exposure management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Refresher training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D	RECORD KEEPING	YES	NO	N/A
1	Risk management			
	a) List of work processes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Risk assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	c) Implementing of recommended control measures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d) Review on risk assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Chemical management			
	a) Register of Chemicals Hazardous to Health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Inventory of hazardous chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Safety data sheet (SDS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d) Chemical Health Risk Assessment (CHRA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	e) Chemical Health Risk Assessment recommendations (based on CHRA report)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	f) Medical surveillance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Noise exposure management			
	a) Identification of excessive noise	<input type="checkbox"/>	<input type="checkbox"/>	
	b) Noise Risk Assessment (NRA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Noise Risk Assessment recommendations (based on NRA Report)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d) Audiometric testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Ergonomic management			
	a) Identification of ergonomic issues	<input type="checkbox"/>	<input type="checkbox"/>	
	b) Ergonomic Risk Assessment (Initial ERA / Advanced ERA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Ergonomic Risk Assessment recommendations (Based on ERA report)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5	Plant management			
	a) Maintenance records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Certificate of fitness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Competent persons			
	i. Steam engineer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	ii. Steam engine / Boiler operatorT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	iii. Crane operator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	iv. Authorised gas tester & Entry supervisor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d) Procedure – Lockout tagout (LOTO) or equivalent for plant/machinery maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Emergency response plan (ERP)			
	a) ERP procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Emergency evacuation plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Emergency response team	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d) Emergency contact list	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Contractor management			
	a) OSH elements included in contract management procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) OSH specifications stated in agreements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Monitoring of contractors / subcontractors / vendors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8	Notification of accident, dangerous occurrence, occupational poisoning and occupational diseases			
	a) Accident / Dangerous occurrence report (JKKP 6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Occupational poisoning / Occupational disease report (JKKP 7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c) Register of accidents, dangerous occurrences, occupational poisoning and occupational diseases (JKKP 8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Personal protective equipment (PPE) management			
	a) PPE Records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Supplied PPE is approved by DOSH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix 1 Self-Assessment Checklist

ii. Physical Inspection

BIL	CHECKLIST			
A	WORKPLACE ASSESSMENT	YES	NO	N/A
1	Exit signs and emergency lights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Unobstructed pathways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Items are arranged in orderly manner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Verification of safe structure of work platform / load	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Demarcation of work Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Work floor, platforms, and stairs are in good condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Open edges are barricaded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Floor openings and manholes are covered / barricaded.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Housekeeping and cleanliness of work area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Risk control for working at heights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Controls for risks related to the workplace environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Risk controls for working in confined spaces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B	PLANT MANAGEMENT	YES	NO	N/A
1	Risk control for operation of plant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Safe work procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Registration of certificated machinery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Warning sign	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Electrical safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Safety devices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Safety machinery guarding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C	HAZARDOUS CHEMICAL	YES	NO	N/A
1	Labelling and relabelling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Control of exposure to hazardous chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Warning sign	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Storage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Safety data sheet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D	NOISE EXPOSURE MANAGEMENT	YES	NO	N/A
1	Engineering controls as absorption, silencers, insulation, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Administrative controls as quiet zones, job rotation and work scheduling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Warning signs in hearing protection zones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Use of hearing protectors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E	ERGONOMIC MANAGEMENT	YES	NO	N/A
1	Ergonomic risk controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F	WELFARE	YES	NO	N/A
1	Toilet facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Rest / prayer areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Clean drinking water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Recreational and social facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	EMERGENCY RESPONSE PLAN	YES	NO	N/A
1	First aid box	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Firefighting equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Assembly point	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix 2 Guidance for Self-Assessment Checklist

i. Documentation Inspection

NO	ITEM	DESCRIPTION
A		
POLICY		
1	Formulation of Occupational Safety and Health Policy	Written policy, date, signature, display, and language understood (BM or another language if necessary) 'N/A' if the total number of employees is 5 or fewer <i>(If 'No': A(2), A(3), A(4) are marked 'No'</i> <i>If 'N/A': A(2), A(3), A(4) are marked 'N/A')</i>
2	Commitment from top management	Formulated and updated by top management
3	Communication to all employees and stakeholders	Dissemination of the Occupational Safety and Health Policy to all persons entering or present on the premises, effectively through any communication method such as display, briefing or video
4	Employee involvement / understanding	Employee involvement / understanding of the Occupational Safety and Health Policy
B		
OSH ORGANIZING		
1	Establishment of the Safety and Health Committee (SHC) if there are 40 or more employees	Every employer shall establish an SHC at the workplace if 40 or more employees are engaged. For fewer than 40 employees, refer to item 1(e) <i>(If 'No': 1(a-d) are 'No'; if 'N/A': 1(a-d) are 'N/A')</i>
	a) Membership	Documents that can be referred to are the organizational chart or the appointment letter a. 100 employees and below - Chairman, secretary, and a minimum of 2 employee representatives and 2 employer representatives b. 101 employees and above - Minimum of 4 employee representatives and 4 employer representatives
	b) Regular meetings	The meeting frequency shall be at least once every 3 months, and discussions on OSH issues (refer to minutes of meeting)

	c) Workplace inspection by SHC	The workplace inspection at least once every 3 months (refer to workplace inspection records)
	d) Investigation of accidents, occupational diseases, dangerous occurrences, occupational poisonings, near misses by SHC	A brief and complete accident report reviewed by the Chairman of the SHC
	e) Establishment of SHC or Safety and Health Team if fewer than 40 employees	The employer's initiative or the Director-General's directive to establish a SHC as part of occupational safety and health management
	f) OSH Responsibilities clearly stated for all SHC Members	The OSH responsibilities are outlined in the organizational chart, appointment letter, along with the terms of reference (TOR) or job description
2	Appointment of Safety and Health Officer (SHO)	Refer to the Safety and Health Officer Order 1997: a. 100 employees and above – shipbuilding, gas & petrochemical industry, chemical industry, boilers and pressure vessels, metal industry, woodworking industry, cement b. 500 employees and above – manufacturing industry only. <i>(If 'Yes': item 3 is 'N/A'; if 'No': item 3 becomes 'Yes' or 'No'.)</i>
3	Appointment of Occupational Safety and Health Coordinator, if 5 or more employees are employed at the workplace	A person responsible for OSH management at workplaces with more than 5 employees where SHO appointment is not required
C	OSH TRAINING	
1	Planning	Annual or periodic OSH training plan (e.g., milestone chart)

2	Implementation	
	a) Induction	Once for ALL new employees regarding workplace management / regulations (attendance records)
	b) On-Job Training	Attendance records (Referring to the SOP implementation training) Example: toolbox meetings, coaching, mentoring
	c) Emergency Training	Training records covering first aiders, firefighters, fire drills, use of equipment and actions during emergencies (emergency exit plan, assembly point, emergency telephone numbers, etc.) Section 15(2)(f) of the Occupational Safety and Health Act 1994: Development and implementation of procedures for dealing with emergencies that may arise while employees are working
	d) Training / safety briefing to contractors, visitors, and persons other than his employees	Record of training / briefings or equivalent
	e) Machinery management training	Record of training on machinery related such as work at height/ confined space/ forklift, etc
	f) Training on the Use of Personal Protective Equipment (PPE)	Record of training on the use of PPE
	g) Training for SHC members	Record of training related to OSH Referring to Safety and Health Committee Regulations 1996
	h) Handling of hazardous chemicals	Record of training related to the handling of hazardous chemicals conducted once in every two (2) years (if hazardous chemicals are used)
	i) Noise exposure management	Record of training related to noise exposure management conducted once a year for employees that exposed to 'excessive noise' (if there is any excessive noise exposure)

3	Refresher Training	Record of refresher training including internal workplace training other than items 2(h) and 2(i) (Refer to milestone chart)
D RECORD KEEPING		
1	Risk management	
	a) List of work processes	Employer to lists all work processes at the workplace (routine/non-routine)
	b) Risk assessment	<p>Tick 'Yes' If: Risk assessment is conducted for ALL activities (e.g., confined space, work at height, etc.).</p> <p>Tick 'No' If: No assessment was done /incomplete assessment /only conducted to some work activities / no assessment for confined space work.</p>
	c) Implementing of recommended control measures	Take action on all recommendations in the risk assessment reports; prioritisation to the high-risk activities
	d) Review on risk assessment	<p>The risk assessment shall be reviewed if:</p> <ul style="list-style-type: none"> a. Occurrence of any incident to personnel due to workplace hazard exposure b. There is a significant change in processes / practices / procedures c. New information on hazard; or d. Directed by the Director General
2	Chemical Management	
	a) Register of Hazardous Chemicals to Health	ALL chemicals hazardous to health only
	b) Inventory of hazardous chemicals	ALL hazardous chemicals (applies to manufacturers or importers of hazardous chemicals).

	c) Safety Data Sheet (SDS)	ALL hazardous chemicals must have Safety Data Sheet
	d) Chemical Health Risk Assessment (CHRA)	<p>The assessment report to be prepared by an assessor. Review of assessment shall be conducted if:</p> <ol style="list-style-type: none"> Significant changes in the work; More than five (5) years since the last assessment; Directed from the Director General, Deputy Director-General or State DOSH Director <p>*Significant changes: Changes that may affect the risk outcomes, adequacy of controls, or assessment conclusions*</p>
	e) Chemical Health Risk Assessment recommendations (based on CHRA report)	Based on the assessor's recommendations in the CHRA report
	f) Medical surveillance	Based on the assessor's recommendations in the CHRA report
3	Noise exposure management	
	a) Identification of excessive noise	<p>Tick 'Yes', if: Excessive noise identification has been conducted using Appendix 1 Code of Practice for Occupational Noise Exposure and Hearing Conservation 2019</p> <p>Tick 'No', if: Excessive noise identification has not been conducted</p>
	b) Noise Risk Assessment	<p>Tick 'Yes' if: NRA was conducted by a Noise Risk Assessor</p> <p>Tick 'No' if: NRA was not conducted by a Noise Risk Assessor</p> <p>Note: Noise Risk Assessment shall be conducted if the results of the Excessive Noise Identification Checklist indicate the presence of excessive noise. Please refer to the Excessive Noise Identification Checklist format in Industry Code of Practise for Management of Occupational Noise Exposure and Hearing Conservation 2019</p>

		<p>b. Excessive noise means daily noise exposure levels exceeding:</p> <ul style="list-style-type: none"> • Leq – 82 dB(A), or • Daily noise dose – 50%, or • Max SPL – 115 dB(A), or • Peak sound pressure level – 140 dB(C)
	c) Noise Risk Assessment recommendations (based on NRA Report)	Based on assessor's recommendations in the NRA report.
	d) Audiometric testing	<p>Tick 'Yes', if:</p> <ol style="list-style-type: none"> a. Audiometric testing is conducted annually for employees exposed to excessive noise above the noise exposure limits. Based on the recommendations from the competent person; b. Audiometric testing is carried out by an Audiometric Testing Centre approved by DOSH; and c. Audiograms are interpreted by an Occupational Health Doctor <p>Tick 'No', if: Audiometric testing is not conducted</p> <p>Note: Noise Exposure Limit means daily noise exposure levels exceeding:</p> <ul style="list-style-type: none"> • Leq – 85dB(A), or • Daily noise dose – 100%, or • Max SPL – 115dB(A), or • Peak sound pressure level – 140dB(C)
4	Ergonomics management	
	a) Ergonomics management	<p>Tick 'Yes' if:</p> <p>Has conducted the identification of the ergonomic issues. Methods of identification includes Self-Assessment Musculoskeletal Pain, walkthrough inspection, record review and others.</p> <p>Tick 'No' if: Has not conduct the identification of the ergonomic issues.</p>
	b) Ergonomic Risk Assessment (Initial ERA / Advanced ERA)	<p>Tick 'Yes' if:</p> <p>Has conducted at least Ergonomic Risk Assessment (Initial ERA) by an Ergonomic Trained Person to determine the ergonomic risk factors.</p>

		<p>If there are any significant ergonomic risk factors, Advanced ERA must be conducted to determine the level of ergonomic risk as per the Guideline for Ergonomic Risk Assessment at the Workplace 2017.</p> <p>Tick 'No' if: Did not conducted the ergonomic risk assessment (Initial ERA/ Advanced ERA).</p> <p>Tick 'N/A' if: There are no ergonomic risk factors at the workplace.</p> <p>Note: Ergonomic risk factors include:</p> <ol style="list-style-type: none"> Awkward posture Static/sustained posture Excessive force Repetitive movement Contact stress Environmental factors (noise, lighting)
	c) Ergonomic Risk Assessment recommendations (Based on ERA Report)	<p>Tick 'Yes' if: The risk controls are at least partially or fully implemented as recommended in Ergonomic Risk Assessment reports (Initial ERA / Advanced ERA)</p> <p>Tick 'No' if: Did not implement the Ergonomic risk controls</p> <p>Tick 'N/A' if: Not required to implement the Ergonomic Risk Controls</p>
5	Plant management	
	a) Maintenance records	Records of plant and machinery maintenance
	b) Certificate of fitness	ALL CF-registered machinery must have a valid Certificate of Fitness
	c) Competent persons	
	i) Steam engineer	ALL must comply with legal requirements
	ii) Steam engine/Boiler operator	ALL must comply with legal requirements
	iii) Crane operator	ALL must comply with legal requirements
	iv) Authorised gas tester & Entry supervisor	ALL must comply with legal requirements

	d) Procedure – Lockout Tagout (LOTO) or equivalent for plant/machinery maintenance.	Records of plant and machinery maintenance procedures and systems
6	Emergency Response Plan (ERP)	
	a) ERP procedures	Procedures related to actions for emergencies such as fire / chemical spill / bomb threat / evacuation and others
	b) Emergency evacuation plan	Available and displayed
	c) Emergency response team	Refer to ERT organizational chart and displayed
	d) Emergency contact list	Available and displayed
7	Contractor management	
	a) OSH elements included in contract management procedures	Tick 'Yes' if: Contractor / supplier OSH evaluation conducted before appointment
	b) OSH specifications stated in agreements	Tick 'Yes' if: OSH requirements are stated (e.g., competent persons such as SHO/SSS/AGT, OSH costs including PPE and warning signage, or other specifications)
	c) Monitoring of contractors / subcontractors / vendors	Tick 'Yes' if: Any method for monitoring / evaluating OSH performance is implemented during contract execution. Monitoring / assessment results can be considered for the selection of contractors / vendors for future contracts
8	Notification of accidents, dangerous occurrences, occupational poisoning and occupational diseases	
	a) Accident / Dangerous occurrence report (JKKP 6)	Notification via the online MYKKP system if an accident occurs that results in sick leave exceeding 4 days / dangerous occurrence that causes death or bodily injury

	b) Occupational Poisoning/Occupational Disease Report (JKKP 7)	Notification via the online MYKKP system if an occupational poisoning/occupational disease occurs causing death or bodily injury
	c) Register of Accidents, Dangerous Occurrences, Occupational Poisoning and Occupational Diseases (JKKP 8)	Notification via the online MYKKP system before 31 January of the following year
9	Personal protective equipment (PPE) management	
	a) PPE records	<p>Tick 'Yes' if: The issuance of PPE is recorded</p> <p>Tick 'No' if: The issuance of PPE is not recorded</p> <p>'N/A' if: PPE usage is not required</p>
	b) Supplied PPE is approved by DOSH	<p>Tick 'Yes' if Supplied PPE has DOSH approval</p> <p>Tick 'No' if The PPE supplied is not approved by DOSH, or PPE is not provided</p> <p>Tick 'N/A' if PPE usage is not required</p>

Appendix 2 Guidance for Self-Assessment Checklist

ii. Physical Inspection

NO	ITEM	DESCRIPTION
A	WORKPLACE ASSESSMENT	
1	Exit signs and emergency lights	ALL doors are equipped with functioning 'EXIT' signs, and emergency lights are provided within the premises
2	Unobstructed pathways	ALL safe work pathways are clearly marked (e.g., yellow line) and free from obstruction.
3	Items are arranged in orderly manner	<ul style="list-style-type: none"> a. Provide appropriate locations; and b. Ensure the items are properly arranged stable, safely, and clearly marked
4	Verification of safe structure of work platform / load capacity	<p>The platform is designed in accordance with engineering practices and has structural safety verification from a Professional Engineer (PE). Examples that structure that support the loads such as:</p> <ul style="list-style-type: none"> a. Work platforms b. Access platform c. Load platforms d. Storage racks (if no supplier specification)
5	Demarcation of work area	Provide signage according to the work process activity
6	Work floor, platforms, and stairs are in good condition	<ul style="list-style-type: none"> a. Access platforms and work platforms are adequately designed and maintained for the work performed, provided with guardrails, and equipped with toe boards, and b. Stairs are made of sturdy materials and equipped with handrails
7	Open edges are barricaded	All open edges are properly secured with suitable barriers
8	Floor openings and manholes are covered or barricaded.	<ul style="list-style-type: none"> a. Adequate warnings / signage on openings; and b. Manholes / openings are securely covered or guarded

9	Housekeeping and cleanliness	Workplace housekeeping and cleanliness maintained and no stagnant water
10	Risk control for working at heights	Compliance with safe work procedures and provision of safety equipment
11	Controls for risks related to the workplace environment	<p>a. Adequate lighting is provided; for example, no water pooling, proper drainage, and pest control are in place</p> <p>b. Note: Refer to the Guideline on Occupational Safety and Health for Lighting at the Workplace 2018</p>
12	Risk controls for working in confined spaces	<p>Tick 'Yes' if: Risk assessment conducted for all activities (including confined space work), e.g., HIRARC / JSA / other methods</p> <p>Tick 'No' if: No assessment / incomplete / only partial activities / no assessment for confined space</p>
B	PLANT MANAGEMENT	
1	Risk control for operation of plant	ALL plants must have practicable risk controls based on the severity, knowledge, methods, and costs related to risks in machinery operation and maintenance
2	Safe work procedures	<p>Tick 'Yes' if: SWP are provided for ALL activities involving plant and machinery, including confined space work, and properly displayed</p> <p>Tick 'No' if: SWP cover only some activities or are not displayed</p>
3	Registration of certificated machinery	ALL certificated machinery registration numbers are displayed

4	Warning sign	Hazard warnings on plant and machinery
5	Electrical safety	ALL wiring, equipment, and fittings are in a safe condition
6	Safety devices	ALL machinery equipped with safety devices by the manufacturer must have the safety devices in place during operation
7	Safety machinery guarding	ALL rotating or exposed machinery must be guarded
C	HAZARDOUS CHEMICALS	
1	Labelling and relabelling	<p>Labelling / relabelling shall follow the chemical type used and time of use:</p> <p>Time of use:</p> <ol style="list-style-type: none"> within normal working hours; outside normal hours; or immediate use <p>If the hazardous chemical used is:</p> <ol style="list-style-type: none"> Pesticide – label according to the Pesticides Act 1974 (Act 149); Scheduled waste – label according to Environmental Quality (Scheduled Wastes) Regulations 2007 [P.U.(A) 158/2007]; Other hazardous chemicals to health – label according to the Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013
2	Control of exposure to hazardous chemicals	<p>Employers shall control hazardous chemicals to health by implementing the control measures recommended by the assessor, namely:</p> <ol style="list-style-type: none"> Elimination of hazardous chemicals from the workplace Substitution of hazardous chemicals with less hazardous substances Complete enclosure of processes and handling systems. Work segregation Modification of process parameters; Engineering control equipment; Safe systems and work practices; or Provision of approved PPE

3	Warning sign	<p>Warning signage according to USECHH 2000:</p> <p>Warning signages shall:</p> <ol style="list-style-type: none"> Displayed in a clearly visible location Warn of hazards; Written in the National Language and English; and Printed with dark red on white background
4	Storage	<p>Storage per Guideline for Storage of Hazardous Chemicals: Safe Packaging Warehouse Guide 2005:</p> <ol style="list-style-type: none"> Dedicated chemical store room, and Chemicals segregated from other items; and SDS available; and Fire extinguishers provided; and Hazard-category warning signs; and Control systems (bund wall, leak detector, eye wash, emergency shower, etc.); and Good ventilation system
5	Safety Data Sheet	<p>Ensure chemicals shall have SDS from suppliers, displayed near the chemical and easily accessible</p>
D NOISE EXPOSURE MANAGEMENT		
1	Engineering controls as absorption, silencers, insulation, etc.	<p>Engineering controls specifically stated in the NRA report have been fully implemented</p>
2	Administrative controls as quiet zones, job rotation, scheduling	<p>Administrative controls specifically stated in the NRA report have been fully implemented</p>
3	Warning sign in hearing protection zones	<p>Areas exceeding noise limits are marked with 'Hearing Protection Zone' or other appropriate signs</p>

4	Use of hearing protectors	Employees wear hearing protectors in excessive-noise areas
E	ERGONOMICS MANAGEMENT	
1	Ergonomic risk controls	<p>Have implemented at least half or all ergonomic controls as per ERA report. Examples of risk ergonomic:</p> <ol style="list-style-type: none"> Use of robotic/mechanical lifting equipment/trolleys for manual handling Adjustment of workstations Ergonomic chairs (adjustable height, armrests, headrest, lumbar support) Ergonomic supports (wrist, back, footrest, anti-fatigue mat) Screen protectors/low-radiation monitors Job rotation Frequent short breaks Other suitable ergonomic controls
F	WELFARE	
1	Toilet facilities	Adequate and clean toilets provided
2	Rest / prayer areas	Comfortable and conducive rest / prayer areas provided
3	Clean drinking water	Supply of drinking water from a clean source provided; drinking areas kept clean
4	Recreational and social facilities	Provision of health, recreational or social activities for employees
G	EMERGENCY RESPONSE PLAN (ERP)	
1	First Aid Box	Provide first aid box contents that according to specifications and are not expired
2	Firefighting equipment	Having valid fire extinguishers and appropriate firefighting equipment which are available, easily accessible and clearly marked with warning signs / location indicators. Examples: sprinklers, smoke detectors, hydrants, etc
3	Assembly Point	A designated assembly point that is safe, suitable and clearly marked

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