

Ministerial Regulation No. 9, B.E. 2513 (1970)

Issued in Accordance with the Minerals Act, B.E. 2510

Translation

By virtue of Section 17 of the Minerals Act B.E. 2510, the Minister of National Development has issued the Ministerial Regulation as follows:

The procedures to provide protection and safety for workers and the third persons are the followings:

1. A holder of Prathanabat, Provisional Prathanabat, Mineral Processing License, or Metallurgical Processing License shall provide first-aid necessities without any charge to help workers in a timely manner in the case that they are injured or sick.
2. When an accident occurs resulting in human fatality or inability to work within 48 hours, or more than 48-hour shutdown of the operation and the accident causing the shutdown may harm workers or the third persons; the holder of Prathanabat, Provisional Prathanabat, Mineral Processing License, or Metallurgical Processing License shall report the incidence to the Local Mineral Industry Official within 72 hours after the accident. However, in case the inability to work or the required shutdown takes less than 48 hours, the holder shall make a report in the official monthly report form, which is designated by the Department of Primary Industries and Mines, no later than the fifth day of the following month.

(As amended by the Ministerial Regulation No. 50 (B.E. 2525))

3. The holder of a Prathanabat, Provisional Prathanabat, Mineral Processing License, or Metallurgical Processing License must provide drinking water, water supply, lighting, and lavatory in hygienic condition for the workers in a mining area, mineral processing area, or metallurgy area.
4. The holder of a Prathanabat, Provisional Prathanabat, Mineral Processing License, or Metallurgical Processing License must perform as follows.

CHAPTER 1**General Provisions**

- 1) Appoint a representative upon the absence of the statutory tenant of mining area, mineral processing area, or metallurgy area.
- 2) In case more than 20 workers are employed, arrange to have a supervisor to look after routine operation for safety and accident prevention during mining, mineral processing or metallurgical processing. In addition, the results of the safety inspections must be documented in order to present to the competent official.
- 3) Cooperate by sending personnel to be trained at the training center on the supervision of the operation with regard to the accidental protection and first aid.
- 4) Keep the mining face in the condition that is safe from sliding, collapsing, and falling of any objects that may cause harm to persons, and arrange a chief worker or a deputy for close supervision throughout the period of operation.
- 5) Provide sufficient lighting for operation at the mining face, mineral processing plant, or metallurgical processing plant.
- 6) Equip all the buildings in mining, mineral processing, or metallurgy area with fire extinguishers.

CHAPTER 2

Provisions on the Use of Water Jet Monitor

- 7) Prevent any person from standing in front of a water jet monitor while loosening the ground. In case of necessity in doing so, stop the water jet first.
- 8) Keep the distance between the monitor and the mining face at no less than the height of the face to be mined.
- 9) Arrange to have an operator in active duty at all times during ground loosening by water jet.

CHAPTER 3

Provisions for Machine and Equipment Operation

- 10) Allow only authorized person to operate the equipment.
- 11) Well-fitting dress must be worn by the operator when working around moving parts of the equipment.
- 12) Machines, belt conveyors, gears, crankcases, or flywheels, which may cause accident or fatality to workers, must be covered with protection for safety.
- 13) The pulleys that are located no higher than 2.5 meters above the ground must have protected cover for safety.
- 14) Prevent anyone from operating any equipment unless it is certain that nobody else is in the vicinity that may be harmed by the equipment.
- 15) The walkways along equipment need to have suitable spacing. In case they are in the limited space between equipment, there must be side protection against the equipments for safety on both sides of the walkways.
- 16) Designate that the operator of a stone grinding machine must wear safety glasses.
- 17) Maintain every vehicle with good working condition of brakes and signals.

CHAPTER 4

Provisions on the Use of Boiler

- 18) Arrange for a routine check inside the boilers at least once a year.
- 19) Arrange for regular checks on the safety valves.
- 20) Keep a water-level gauge, vapor-pressure gauge and their accessories in a clean and good working condition.
- 21) Prevent anybody from repairing the boilers and their connected accessories while the vapor pressure is active.
- 22) Arrange for at least two exits in a boiler room. In case there are door panes, they must be pushed open only in an outward direction.

CHAPTER 5

Provisions on the Use of Electricity

- 23) Arrange the high-voltage power lines to be installed at no less than 5 meters above the ground. If the installation across any buildings or structures is necessary, the power lines need to be installed at least 3 meters in height above these structures.
- 24) Provide lightning protection facilities for electrical devices and high-voltage circuits.
- 25) Post a sign "Danger-High Voltage" to be clearly seen by using red-colored letters on white background board to the place where a transformer or a high-voltage panel is installed.
- 26) Provide ground lines for any parts that may have electrical leak, e.g., metal structure, outer-covering, motor cover, generator cover, electrical panel or other electrical devices.
- 27) Regularly check the ground lines to ensure they are in good working condition.
- 28) Provide the electrical control panel with the following:
 - (a) enough room around the panel for convenient operation,
 - (b) sufficient lighting, and
 - (c) emergency circuit breaker.
- 29) Designate clear displaying devices for all switches to signal their functioning.
- 30) Prevent any person from working on the electrical circuit that still has active electric current unless it is necessary.
- 31) When the high-voltage circuit is switched off, there must be a fastening or a key lock combined with the clearly-shown sign "Danger-Do Not Switch On."
- 32) Prevent anybody from switching on any circuit unless it is certain that nobody else is operating on the circuit.
- 33) Prevent any person from wrapping active cable line that still has electric current.
- 34) The power lines connected into a building, or installed inside a building or structures must be insulated.

CHAPTER 6

Provisions on the Use of Explosives

- 35) Arrange to have the explosive magazine in the following manner:
 - (a) The magazine building must be fire-proof, water-proof, as well as bulletproof.
The floor material must have no potential to spark.
 - (b) The magazine must be located at no less than 75 meters from any other building, and no less than 100 meters from a main shaft or an access to underground working area.
 - (c) Always keep the magazine securely locked.
 - (d) Post the sign "Danger-Explosives" to be clearly seen using red-colored letters on a white board.
 - (e) Provide good ventilation.
- 36) Keep high explosives at least 30 meters away from the detonators or the detonating cord magazine, and put them separately in two different magazines.
- 37) Arrange for an exclusive magazine to keep only explosives.

- 38) There must be no dry weed or any flammable material within 8 meters around the magazine.
- 39) Make a balance record to show to the officials the remaining amount of high explosives, detonators and detonating cords.
- 40) Prevent the use of deteriorated explosives.
- 41) Prevent any person from carrying detonators together with high explosives.
- 42) Prevent any person from transporting the following together with explosives: any metal, tools made of metal, fuel, matches, acid, or any flammable material.
- 43) Allow only the operator with direct responsibility to make the loading of explosives, with the requirement to move away any flame to a safe distance from the blasting site.
- 44) Prevent any person from smoking during any operation on explosives.
- 45) Allow only wooden materials to be used during loading operation.
- 46) Return the remaining explosives to the magazine immediately after daily use.
- 47) Before each blasting, the blaster must give the signals known to everybody, and at least 15 minutes after the blast to provide the signals of the safe area that has no dust and smoke, prior to the workers can re-access for working.
- 48) Safety fuse in use must be at least 1 meter in length.
- 49) Use only the pliers designed for crimping a plain detonator with safety fuse.
- 50) Prevent any person from using any other material except copper or wooden tool to pierce into high explosives for the insertion of plain detonator with safety fuse.
- 51) Electric blasting must be operated as follows:
 - (a) Short-circuit the two lines of the detonator until the blasting is ready.
 - (b) Short-circuit the two electric leading lines for the blast until the blasting is ready.
 - (c) When the blast is ignited from an electric circuit, use the two-way switch that must be placed at a safe distance from the blasting area, and maintain short-circuit the two electrical lines until the blasting is ready.
- 52) In case of misfire after the blast, blast them out first before any operation is conducted in that area. Drill a new hole parallel to the misfired holes by applying at least 50 centimeters spacing between holes.
- 53) Post the signs "Danger-Blasting Area" to be clearly seen through red-colored letters on white background board, and put them within 100 meter radius around the area.

CHAPTER 7

Provisions for Dredging

- 54) Before starting any moveable parts of any equipment in a dredge, keep everybody away from the parts at a safe distance.
- 55) Give known signals audible to all persons, before starting to move bucket chain or trommel.
- 56) Provide sufficient illumination at all ladders and walkways. Handrails must be installed at all ladders.
- 57) Take precaution not to put any equipment or tools/devices in a possibly rolling-out or falling-down manner.

- 58) During dredging operation, the head and swing lines must be able to move without any obstruction along their length. Take precaution not to allow any person to cross, to go under, or to approach near the head and the swing lines.
- 59) If the head and the swing lines need to be cast across the walkway or the roadway, relocate them at a safe distance. In this case, a prior approved document by Local Mineral Industry Officials must be received before taking such an action.
- 60) Arrange a supervisor to facilitate as well as to provide safety for the passing-by barges or boats, in case of necessity to cast the head or the swing lines across the public waterway.
- 61) Provide sufficient easy-access life-savers for the workers in the dredge.
- 62) Put the signs "Danger from Dredge Lines" in a clearly seen manner, using red-colored letters on white boards; and post them at regular intervals along the lines with the distance between 10 to 30 meters away from the lines.
- 63) Prevent any person from working in the water near the dredge during dredging.

CHAPTER 8

Provisions on Excavators

- 64) Prevent any person from approaching near the excavating, mucking, grading or bulldozing equipment during its operation.
- 65) Designate the employees working around excavators to wear safety hats and safety shoes.

CHAPTER 9

Provisions on Underground Mining

- 66) Provide good ventilation according to the appropriate technical practice, and supply the minimum amount of 1.5 cubic meters per minute per manpower working underground.
- 67) Prevent any person from working in the underground area that has oxygen less than 20 percent by volume, or carbon dioxide or other toxic gases more than 0.5 percent by volume or methane more than 1 percent by volume.
- 68) Provide at least two accesses to the underground, with the exception at the development stage prior to ore production that one access is temporarily allowed.
- 69) Prevent any person from using any fuel consuming equipment underground, except with the written approval from the Local Mineral Industry Officials.
- 70) Use only electric, dry cell, carbide lantern, or candle to illuminate underground; however, the underground coal mine must be illuminated by electric or dry cell only.
- 71) Provide strong and stable supports for shafts, adits, and tunnels.
- 72) Prevent any person from making a support stretching out further than 2.5 meters span.
- 73) Take precaution not to allow any person to work in an unsafe adit or tunnel, unless a safe condition can be managed.
- 74) In order to take precaution against danger or accident to persons or properties, assign a shift supervisor to inspect the following: shaft and tunnel supports, ventilation system, machinery, hoisting wire ropes, and other activities. In case of

any defect or malfunction, immediately correct it to obtain safe condition. Always make each shift fill out an inspection record as evidence to present to competent officials.

- 75) Arrange to have the mining faces checked before any blast hole drilling. If unsafe, support them to be in a safe condition before making any operation.
- 76) After blasting, arrange to have the adit or tunnel checked for safe condition before making any successive operation.
- 77) Provide each underground operator with personal dry cell or carbide-lantern.
- 78) The shaft that is used as a passage way, if equipped with ladders, must be in rigid and safe condition, with no less than 50 centimeters in width, no more than 30 centimeter between steps, and the minimum area of 60x120 centimeters for the platforms which should not be more than 8 meter interval.
- 79) Prevent any person from being transported up and down along a shaft using manual or rope winch.
- 80) In case of using equipment to hoist workers up/down along the shaft, the hoisting speed must not be more than 300 meters per minute, and needs to be equipped with safety protection.
- 81) The hoisting rope must be strong enough to withstand both the load to be hoisted up/down and the weight of the rope itself. It is compulsory to have the factor of safety at least 6 times the specified load to be used.
- 82) Spray water into the drilled holes at all times when drilling blast holes with a drilling machine, unless having sufficient dust protection.
- 83) To use mine cars for transportation, there must be in good condition, equipped with sound-signal devices, and headlights at the locomotive, and light signals at the last mine car. The locomotive with its trailing mine cars need to have the minimum clearance of 60 centimeters from each side of the adit or tunnel wall. Also, take precaution not to allow any loading stretched out from the mine car carrier. The rails as well as the switching keys must be in good working condition.
- 84) Take precaution not to allow any unauthorized person to accompany in the explosive transporting vehicles. The explosive truck must have a minimum traveling distance of 100 meters from other vehicles. During transportation, the explosives must be contained in the cases or packages that are made of materials non-conductive to electricity or heat.
- 85) Explosive containers that are used underground must be made of materials not conductive to electricity or heat, and must be at least 8 meters away from the engine-driven machine or the power line.
- 86) Assign the underground operators to wear safety hats and safety shoes.
- 87) Arrange to store fuel, lubricant, and grease to be used underground only in containers with tight covers.
- 88) Prevent the following persons from working underground: any person under 18 years of age, female, unhealthy person, any person with contagious diseases.
- 89) Except for the worker or the person involved in the underground operation, other persons are not permitted to go underground, unless accompanied by mine personnel.

Given on the 24th day of March B.E. 2513

Signed by Poj Sarasin

Minister of National Development

Remark: The reason for the Ministerial Regulations to be promulgated is for the purposes of providing the workers with safety environment during working, hygienic living, justice to be received from employers in case of accidents, and no grievance to the third person because of the operations.

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