

**DENR Administrative Order
No. 97-30
September 11, 1997**

**SUBJECT : Small-Scale Mine Safety Rules
and Regulations**

Pursuant to the provisions of Sec. 7 (c) of Executive Order No. 192, Sec. 8 of Presidential Decree 1899, Sec. 24 (d) of Republic Act No. 7076, the following health, sanitation and safety rules and regulations are hereby promulgated for the guidance and compliance of all concerned.

**CHAPTER I
Scope and Coverage**

This Order shall govern all contractors, associations, processors, permittees, operators, workers, individuals and other entities engaged in any form of small-scale mining and commercial, foreshore, gratuitous and special sand and gravel extraction in the Philippines except small-scale coal mines to effect a safe and accident-free operation in small-scale mining areas.

**CHAPTER II
Title and Definitions**

TITLE: This Order shall be known and maybe cited as the "SMALL-SCALE MINE SAFETY RULES AND REGULATIONS."

DEFINITION OF TERMS: As used in, and for the purpose of this Order, the following terms, whether in singular or plural form, shall have the following meanings:

1. "Accident" — an undesired event in which the contact, the exposure or the movement of a person to objects, equipment, machineries, substances, conditions or other persons may or may not cause personal injury, damage to property and delay in the operation.
2. "Accident Frequency Rate" — the total fatal and non-fatal lost-time accidents per million manhours worked, and may be expressed in the following formula:

$$\begin{array}{lcl} \text{Frequency} & & \text{No. of Lost-Time Accidents x 1,000.000} \\ \text{Rate} & = & \text{Manhours Worked} \end{array}$$

3. "Accident Severity Rate" — the days lost per million manhours worked and may be expressed in the following formula:

$$\begin{array}{lcl} \text{Severity} & & \text{No. of Days Lost x 1,000.000} \\ \text{Rate} & = & \text{Manhours Worked} \end{array}$$

4. "Adit" — a main horizontal or near horizontal underground opening with single access to the surface.
5. "Association" — a group of people duly registered by the concerned Local Government Unit.
6. "Board" —the provincial/city mining regulatory board.
7. "Bureau" — the Mines and Geosciences Bureau.
8. "Contract" — co-production, joint venture or mineral production sharing agreement between the State and a small-scale mining contractor for the small-scale utilization of a plot of mineral land under Republic Act No. 7076.
9. "Contractor" — an individual or cooperative of small-scale miners, registered with the Securities and Exchange Commission or other

appropriate government agency which has entered into an agreement with the State for the small-scale utilization of a plot of mineral land within a people's small-scale mining area under Republic Act No. 7076.

10. "Cooperative" — a group of people duly registered by the Cooperative Development Authority.
11. "DENR" — the Department of Environment and Natural Resources.
12. "Development" — systematic work of reaching a mineral deposit as precursor to actual mining through site clearing, stripping overburden, excavating opening, etc.
13. "Director" — the Director of Mines and Geosciences Bureau.
14. "Electrical Installations" — include but not limited to electrical supply equipment, electrical utilization equipment, electric generating plant, electric supply line and substation.
15. "Electrical Supply Equipment" — any equipment which produces, modifies, regulates, controls or safeguards the supply of electric energy.
16. "Excavation" or "Mine Working" — any or all parts of active or inactive mine, including; shafts, tunnels, drifts, crosscuts, raises and winzes.
17. "Exploration" — the examination and investigation of lands and offshore areas supposed to contain valuable minerals by drilling, trenching, shaft sinking, tunneling, test pitting and other means for the purpose of probing the presence of mineral deposits, its value and the extent thereof.

18. "Heavy Equipment" — off-the-road equipment such as but not limited to bulldozers, hauling trucks and payloaders.
19. "Hydraulicking" — a method of surface mining using high pressure water to disintegrate placer deposits.
20. "Local Government Unit" — the concerned Barangay, Municipality, City or Province.
21. "Lost-Time Accident, Non-Fatal" — lost-time accident that will prevent the injured person from reporting to work on the working day following the day of injury, fails to continue his normal work due to complications and accidents resulting to permanent injuries or disabilities as listed in Appendix B. Counting of days lost shall start from the time the injured person fails to report for work. cdll
22. "Lost-Time Accident, Fatal" — lost time accident that results in the death of the injured person.
23. "Mechanical Equipment, Machinery or Processing Equipment" — crushers, mills, mixers, pumps, compressors, cranes, hoists, line-shifting or other non-sophisticated equipment suitable to small-scale mining operation which shall not include motor vehicles, street cars, and similar machinery used as means of transportation.
24. "Mine" — includes all excavations or workings for the purpose of searching for or finding minerals as well as the workings of mineral deposits whether abandoned or actually being worked on the surface or underground together with all buildings, premises, installations, and appliances belonging or appertaining thereto.
25. "Miner" — any individual who is actively engaged in the development, extraction and/or utilization of minerals.

26. "Non-Lost Time Accident" — those that will not prevent the injured person from reporting to his designated work on the working day following the day of injury and thereafter.
27. "Open Pit", "Open Cut", or "Surface Mines" — include all excavations or workings for the purpose of searching for or finding and extracting mineral deposits whether abandoned or actually being worked on the surface.
28. "Operator" — any person or entity who has an agreement duly registered with the Board or its equivalent to undertake a special job related to small-scale mining and sand and gravel operations.
29. "Order" — the Small-Scale Mine Safety Rules and Regulations.
30. "Permit" — small-scale mining permit issued under Presidential Decree No. 1899, commercial, sand and gravel, foreshore, gratuitous and special permits.
31. "Permittee" — any person or entity to whom a permit is duly granted by the concerned LGU/DENR.
32. "Pillars" — the unmined portion of the mineral deposits or host rocks in underground working areas left in place for support purposes.
33. "Plant" — includes mineral processing plant, beneficiating plant, power plant, motor pool, foundry shop, laboratory and the like.
34. "Processor" — a person and/or entity issued a license by the concerned LGU/DENR to engage in the treatment of minerals or ore bearing materials such as by gravity concentration, leaching, beneficiation, cyanidation, cutting, sizing, polishing and other similar activities.

35. "Producing Mine" — any mine presently involved in the development and utilization of mineral deposit/s.
36. "Prospecting" — the search for mineral deposits through aerial photography, geophysics, borehole logging, etc.
37. "Raise" — vertical or near vertical opening driven upward from one level to another.
38. "RED" — Regional Executive Director.
39. "Regional Director" — Mines and Geosciences Bureau Regional Director.
40. "Regional Office" — Mines and Geosciences Bureau Regional Office.
41. "Shaft" — primary vertical or near vertical opening connecting the surface with underground workings for purposes of men, material, ore and mine waste passage and ventilation.
42. "Small-Scale Mining" — mining activities which rely heavily on manual labor using simple implements and methods and do not use explosives or heavy mining equipment.
43. "Stope" — large underground opening, usually inclined or vertical, but may also be horizontal.
44. "Supervisor" — any person to whom the contractor/permittee has delegated authority and responsibility for the direction and control of workmen.
45. "Traffic Control" — patrol vehicles, traffic lights, signs, barricades, detours, flagmen, or other techniques and devices used to regulate movement of vehicles according to prevailing circumstances.

46. "Tunnel" — main horizontal or near horizontal underground opening with access to the surface at both ends.
47. "Underground Mines" — include all workings for the purpose of searching for or finding minerals as well as the workings of mineral deposits in sub-surface area.
48. "Underwater Mining Nearshore" — all excavations or workings for the purpose of finding/exploiting of minerals under bodies of water such as seas, lakes, rivers, etc.
49. "Winze" — vertical or near vertical underground opening driven downward from one level to another.

CHAPTER III

General Provisions

- Rule 1 - A record shall be kept by the permittee/contractor/operator of all Non-Lost Time and Lost Time Accidents occurring at any mining property in a form prescribed by the Board or its equivalent (Appendix A).
- Rule 2 - Whenever an accident occurs at a mine resulting in the death of, or in serious physical injury to one or more persons, the permittee/contractor/mining operator/association or his duly authorized representative shall immediately by the quickest possible means available, give notice thereto in writing, or by telegraph or telephone where practicable, to the Board or its equivalent association, copy furnished the Regional Office concerned within five (5) working days. Detailed report shall be submitted to the Board or its equivalent, copy furnished the Regional Office concerned, within twenty (20) days after notice of knowledge by the contractor/operator/permittee of the accident.

Rule 3 - For the purpose of any inquiry or inspection related to safety, health and sanitation, the Board or its equivalent shall:

- a. require the operator/contractor/permittee during reasonable business hours to produce any work, paper, report and document related to the accident.
- b. require the operator/contractor/permittee to present any of his workers/miners to be investigated or examined and be made to sign under oath a declaration from him during the examination.

Rule 4 - Monthly report of accident or sickness on Safety form prescribed in Appendix A shall be submitted to the Board or its equivalent, copy furnished the Regional Office concerned and the Department of Labor and Employment, within the first twenty (20) days of the subsequent month.

Rule 5 - Monthly statistical data on accident shall be accomplished and submitted to the Board or its equivalent copy furnished the Regional Office concerned and the Department of Labor and Employment, within the first twenty (20) days of the subsequent month in Safety Form (Appendix C).

Section 1. CLASSIFICATION OF MINES

Rule 6 - For the purpose of this Order, mines shall be classified as follows:

- a. Surface Mines.
- b. Underground Mines.
- c. Underwater Mining Nearshore.

Section 2. SAFETY ORGANIZATION

Rule 7 - For Surface Mines, a Safety Inspector shall be required for every fifty (50) workers/miners or less.

Rule 8 - For Underground Mines, a Safety Inspector shall be required for every twenty-five (25) workers/miners or at least one (1) Safety Inspector for every opening with less than twenty-five (25) workers/miners.

Rule 9 - For Underwater Mining Nearshore, a Safety Inspector shall be required for every operation.

Rule 10 - A single or group of small-scale mining Operators/Permittees/Contractors shall be required to establish a safety organization which shall be responsible for effective implementation of safety and health program in mining operation.

Rule 11 - A Safety Organization shall be headed by Safety Inspector duly accredited by the appropriate government agency.

Section 3. QUALIFICATION OF SAFETY INSPECTOR

Rule 12 - A Safety Inspector must be a Filipino citizen, of legal age, good moral character, mentally and physically healthy and possess the following minimum qualifications/requirements:

1. Safety training conducted by the Regional Office or other Bureau accredited safety organizations.
2. Involvement in small-scale mining operation for at least six (6) months.

Section 4. DUTIES AND RESPONSIBILITIES OF SAFETY INSPECTOR

Rule 13 - The safety inspector shall:

1. Conduct a daily routinary inspection of the mine and its premises.
2. Make a daily report of inspection and inform the permittee, contractor and operator concerned the places inspected as to ventilation, sanitation, unsafe acts/conditions and working procedures.
3. Receive oral or written reports of workers/miners about unsafe and unhealthy conditions in the mine area and recommend remedial/mitigating measures to the permittee/operator/contractor/association, and supervise its implementation.
4. Instruct/train workers/miners on accident prevention, first aid and sanitation and emergency disaster evacuation procedures.
5. Recommend suspension of mining operation to the permittee/operator/contractor/association when imminent danger so requires.
6. Investigate and report all mine accidents and promulgate ways and means of preventing their recurrence.
7. Keep a record of all accidents and safety inspection reports.
8. Maintain a logbook which shall be placed on the collar/portal anytime of the day of all workers/miners working underground.

Section 5. Duties and Responsibilities of Permittee/Operator/Contractor/Association

Rule 14 -The permittee/operator/contractor/association shall:

1. Take every reasonable precaution necessary to ensure the safety and health of the workers/miners while on duty;

2. Adopt all necessary facilities for a safe, sanitary and healthful working conditions.
3. Make available safety paraphernalia in accordance with the type of work performed.
4. Comply with the existing labor, SSS health rules and regulations.
5. Maintain a fully equipped first aid station or stations at strategic points in the mine.
6. Provide for the training of persons in first aid, fire fighting, mine rescue and recovery operations and other safety measures.
7. Provide a pool of rescuers to attend to emergency cases in the area.
8. Submit to the duly accredited Association, if any, written reports of unsafe working conditions.
9. Adopt and enforce a set of safety rules and regulations applicable to each particular area and possibly with translation in the dialect understandable to the workers of the mine. A copy shall be distributed to every worker/miner including the Board or its equivalent or the Association concerned.
10. Conduct at least one (1) day period for orientation of newly hired workers/miners which shall be in the form of lecture and/or actual observation of the safety rules and regulations and working place where they will be assigned.
11. Plan and arrange all processes of operation with careful attention to safety.
12. Maintain a system of inspection to detect all hazards of operations and report or inform all concerned of any safety and health hazards that may affect or endanger the latter's job and operation.
13. Organize a safety and health committee.
14. Maintain a continuous and regular safety and health meetings for all workers/miners.

15. Submits to the Board or safety organization a monthly report of safety and health meetings.
16. Provide medical and physical examination of its workers/miners at least once a year.
17. Ensure that this Order is complied with.

CHAPTER IV UNDERGROUND MINING RULES

SECTION 1. General Provisions

- Rule 15 - Working areas shall have at least two (2) interconnected, properly maintained openings to the surface for ventilation purposes and escapeway in case of emergency.
- Rule 16 — Underground workings shall be provided with adequate supply of fresh air. In case where natural ventilation is inadequate, an artificial ventilation system should be installed.
- Rule 17 — All miners shall be required to wear protective safety gadgets such as hard hat, rubber boots, etc.
- Rule 18 — When first entering a working place, the ground shall be examined for any loose rocks and tested for drummy ground. Loose rocks or drummy ground shall always be barred down and/or supported before any work is started.
- Rule 19 — All underground workings shall be adequately and effectively supported.
- Rule 20 — Distance between two (2) underground openings shall not be less than twelve (12) meters or 39 feet and 4 inches apart to maintain an adequate pillar. Any deviation of the rule will be subject to the approval of the Board or its equivalent.
- Rule 21 — Shafts, raises (vertical or inclined sinkings) and winzes exceeding 20° inclination shall be provided with ladder ways.

- Rule 22 — A miner shall not be allowed to work alone underground where he could not be seen or heard in case of emergency.
- Rule 23 — Workers shall not be assigned to work at a working place that has been abandoned for a considerable time unless the safety inspector has surveyed it and deemed it safe.
- Rule 24 — All abandoned working areas shall be barricaded and a "Danger" sign shall be posted or back-filled when necessary.
- Rule 25 — Underground workings shall not be allowed to encroach or cross each other.
- Rule 26 — All underground openings such as, main opening/access/principal passage ways, whether horizontal or inclined, shall at least have an effective height of 1.5 meters (4 ft. 6 in.) and an effective width of 1.3 meters (3 ft. 11 in.).
- Rule 27 — Combustible and flammable materials shall not be allowed underground.
- Rule 28 — Cutting of trees within the immediate vicinity of the mine workings shall be prohibited to maintain ground stability.
- Rule 29 — Individuals other than the duly registered and/or authorized miners shall be strictly prohibited from extracting ore from an opening.
- Rule 30 — Unlawful entry in any underground working shall be strictly prohibited.
- Rule 31 — During and right after rains, all mining operations may be suspended by the licensed/registered safety inspector if the conditions warrant such an action. Before operations could resume, there shall be a general safety inspection to detect any ground movement or impending cave in.
- Rule 32 — When men are working one above the other or in any position where they might be injured by falling rocks or debris of any

kind, they shall notify each other and take the necessary precaution before work is started.

Rule 33 — Waste dump area of each working shall be provided with permanent retaining structures/stoppers to prevent downslope movement of the unconsolidated waste materials.

Rule 34 — An updated control map indicating the directions of all underground working shall be maintained.

Rule 35 — All underground miners shall be properly equipped with adequate lighting devices such as flashlight, cap lamp, carbide lamp and the like.

Rule 36 — All accesses to working areas shall be cleared and properly maintained.

Rule 37 — All excavations found along the access route shall be properly indicated and marked. If abandoned, they must be sealed or backfilled.

Rule 38 — Sleeping underground is strictly prohibited.

Rule 39 — Safety ropes or lifelines of appropriate length and size shall be used in areas where there is danger of persons falling.

Rule 40 — Where there is danger of a sudden inrush of water, additional safety precautions such as doors, dams, and the like, shall be constructed.

Rule 41 — To ensure public safety, no underground opening shall be allowed within a radius of fifty (50) meters (151 ft. 5 in.) from roads, cemetery, buildings, watersheds and other structures.

Rule 42 — Old defective timber support shall be replaced and/or reinforced immediately.

SECTION 2. HORIZONTAL OPENINGS

Rule 43 — Horizontal access openings shall have at least an effective height of 1.5 meters (4 ft. 6 in.) and an effective width of 1.3 meters (3 ft. 11 in.).

- Rule 44 — At any given time during the shift, the maximum number of miners in one working face shall be three (3).
- Rule 45 — Tools shall be limited to hand tools such as moils, sledge hammers, cold chisels, wheel barrows, picks, shovels, etc. and light equipment such as rock breakers, chippers, jack hammers, etc.
- Rule 46 — In running ground, booms, stulls and spilings shall be erected to project ahead from the last set of support.
- Rule 47 — Mining in loose or heavy ground shall be closely supervised and shall follow the accepted standard methods of support.
- Rule 48 — In areas where ground support is necessary, adequate supply of support materials shall be maintained and made available. Loose ground shall be barred down, stulled before regular support is installed.
- Rule 49 — If for any cause, the necessary support material is not available and the working place presents a hazard, the work at such place shall be suspended.
- Rule 50 — It shall be prohibited to remove or modify supports which are in place except under instructions and supervision.
- Rule 51 — It shall be prohibited to remove or modify floorings, roofings, mattings, laggings or support of any kind if it will create a dangerous opening, except when under proper supervision.
- Rule 52 — Fractured and broken roof or walls of mine workings shall be provided with closely installed laggings of at least five (5) centimeters thick or minimum of eight (8) centimeters diameter round hard wood timber and shall be tightly blocked.
- Rule 53 — Distance between timber sets shall be not more than 1.7 meters (5 ft. 6 in.).

SECTION 3. VERTICAL OPENINGS AND INCLINED OPENINGS

- Rule 54 — Vertical and Inclined openings shall have a dimension of at least 1.5 meters (4.92 ft.) by 1.3 meters (4.27 ft.).
- Rule 55 — In sinking or raising, the allowed maximum number of miners shall be three (3).
- Rule 56 — In running ground or weak ground (gougy formation), support shall be installed as early as possible and shall project ahead of the last set of support.
- Rule 57 — In sinking or raising in running or weak grounds, all openings shall be adequately supported.
- Rule 58 — In breakthroughs, winzes and openings where there is danger of falling and slipping, adequate covers shall be provided. Where such openings are used as waste or ore passages it shall be provided with grizzlies, guard rails or the like.
- Rule 59 — When using a manway, always face the ladder.
- Rule 60 — Manways and ladderways shall have proper signs or notices indicating whether they are passable or not. Entrances or passable manways or ladderways shall be kept clean and in good condition at all times. Unpassable manways or ladderways shall be provided with appropriate bulkheads and signs.
- Rule 61 — All ladders shall be staggered so that no section is directly in line with the next adjacent section. The ladders shall be constructed of adequately strong materials with rungs placed at equal intervals of thirty-five (35) centimeters apart and securely fastened and maintained in good condition at all times.
- Rule 62 — All shafts or winzes (sinking) shall be provided with standard ladders (2" x 2" x 18" rungs spaced 12" apart). The ladders shall be installed in staggered pattern every three (3) timber sets and shall be provided with landing platforms.

Rule 63 — It shall be prohibited to drop tools or any materials down a vertical opening.

Rule 64 — It shall be prohibited to follow a person who is carrying tools, timber, drill steel or other materials up a ladder.

Rule 65 — All ladders shall project at least sixty (60) centimeters above every platform of the ladderways unless convenient and sufficient hand holds are provided.

Rule 66 — Raises shall be provided with an overhead protection while in the process of advancing.

Section 4. STOPES

Rule 67 — In broken grounds, the maximum dimension of stopes shall be as follows:

Width - 1.50 meters (4 ft. 11 in.)

Height - 2.00 meters (6 ft. 6 in.)

Length - 2.00 meters (6 ft. 6 in.)

Pillars between stopes shall have a maximum dimension of 1.5 meters (4 ft. 11 in.) width, 2 meters (6 ft. 6 in.) height and 2 meters (6 ft. 6 in.) length. If stope is timbered, the dimension may be increased as safety permits.

Rule 68 — In grounds that are competent, the maximum dimension of stopes shall be as follows:

Width - 2 meters (6 ft. 6 in.)

Height - 6 meters (19 ft. 8 in.)

Length - 6 meters (19 ft. 8 in.)

Pillars between stopes shall have a minimum dimension of one (1) meter width, one (1) meter height, one (1) meter length.

Rule 69 — All open spaces and high openings above timbers must be cribbed to the back.

Rule 70 — All stope brows must be stulled especially off raises.

Rule 71 — Loose or drummy slabs that cannot be barred down must be stulled up using a good stull with a head board and a secure hitch for the base of the stull.

Rule 72 — Never place a stull under rocks that need barring down.

SECTION 5. HOISTING, LOADING AND HAULING

Rule 73 — The hoisting facility (rope and pulley assembly) shall always be kept in good operating condition.

Rule 74 — Men shall stay away from suspended load during the hoisting of materials in sinking areas.

Rule 75 — It shall be prohibited to use the hoisting facility as a means of conveyance of miners.

Rule 76 — Tools and other similar materials to be brought in or out of a sinking area shall be handled properly thru the hoist facility.

Rule 77 — The minimum diameter of prescribed hoisting rope shall be ten (10) mm. (0.4 in.) and sixteen (16) mm. (0.64 in.) for other kinds of hoisting ropes.

Rule 78 — Proper signal must be given and properly acknowledged by the hoistman before any hoisting activity commences.

Rule 79 — Hoisting ropes shall be replaced as soon as there is evidence of undue weakness or other conditions that indicate failure.

Rule 80 — Where there is sudden decrease in the diameter of the rope, the same shall be replaced.

Rule 81 — When marked corrosion appears, the rope shall be replaced.

Rule 82 — Loop the timber chain or rope over the end of the bundle to secure materials while hoisting.

Section 6. DRAINAGE

- Rule 83 — Portals, collars and other mine entrances shall be provided with drainage canals to prevent entry of surface run-off in underground workings.
- Rule 84 — Horizontal openings shall be provided with ditches to direct water to the sump or to the surface.
- Rule 85 — Drain pipes shall be installed in a manner that will not cause obstruction to passageways and mainlines.

Section 7. CAVE MINING

- Rule 86 — Before entering the caves, miners shall have adequate lighting devices.
- Rule 87 — Thorough inspection of the roof shall be conducted first before any work is undertaken.
- Rule 88 — Check for any other hazard that may be encountered such as snakes, bats, scorpions, poisonous gas, etc.
- Rule 89 — All workers shall be provided with lifeline and personal protective equipment such as rubber boots, hard hat, dust mask, etc.
- Rule 90 — Miners shall always have a first aid kit while working inside the cave.
- Rule 91 — All underground rules applicable shall be adopted.

Section 8. PROTECTION AGAINST WATER

- Rule 92 — No underground opening shall be driven or caused to be driven under rivers, sea or any known accumulation of standing or running water on the surface with less than ten (10) meters (32 ft. 9 in.) of back or thickness from the true river bed and the roof of the mine working in massive, unbroken or unfractured igneous rocks nor be less than fifty (50) meters (164 ft) back or thickness when the roof of the mine working is broken or fractured rocks. The true depth of the river bed shall be

determined at different points. Deviations from the above requirement shall be subject to the approval of the Board.

Rule 93 — Daily inspection shall be conducted of the mine workings located under rivers, sea or any known accumulation of standing or running water on the surface.

Rule 94 — No mine workings shall be allowed to approach nearer than eight (8) meters (26 ft. 3 in.) to any part of a shaft or any other openings where there is known or suspected accumulation of water.

Section 9. Protection Against Subsidence And Cave-Ins

Rule 95 — All underground workers shall be instructed to recognize signs of impending ground collapse or subsidence. In such cases, the responsible mine officials/ contractors/ permittees/ associations shall be notified immediately to determine the course of action to be taken. In cases of imminent collapse, alarms shall be sounded and all personnel withdrawn.

CHAPTER V SURFACE RULES

Section 1. GENERAL PROVISIONS

Rule 96 — All workers of surface mines shall be required to wear safety boots/shoes and head protector.

Rule 97 — Burning of vegetation for clearing purposes shall be strictly prohibited.

Section 2. PROSPECTING AND EXPLORATION

- Rule 98 — All test pits and trenches shall be provided with safety cover/fence/barricade and shall immediately be backfilled if not to be used thereafter.
- Rule 99 — Test pits and trenches deeper than two (2) meters (6 ft. 6 in.) shall be governed by safety rules and regulations for shaft sinking.
- Rule 100 — Minimum size of the opening of test pits shall be one (1) meter (3 ft. 3 in.) by 1.5 meters (4 ft. 11 in.).
- Rule 101 — Minimum width of trenches shall be one (1) meter (3 ft. 3 in.).
- Rule 102 — All test pits and trenches shall be provided with appropriate drainage along the peripheries.

Section 3. DEVELOPMENT

- Rule 103 — Waste dump areas of each working area shall be provided with retaining structure/stoppers to prevent movement of waste materials.

Section 4. PRODUCTION

A. Open Pit/Quarrying

- Rule 104 — Bench height shall be limited to 1.5 meters (4 ft. 3 in.).
- Rule 105 — Minimum allowable berm for working area shall be two (2) meters (6 ft. 6 in.).
- Rule 106 — Miners working directly under the sun/rain shall be provided with necessary protection.
- Rule 107 — Miners shall be provided with eye protection when doing rock chipping.
- Rule 108 — When working in an area where there is danger of falling, lifelines or platform/scaffold shall be provided.

- Rule 109 — Tampered tools shall not be struck together due to the great possibility of flying chips. Mushroomed tools shall be dressed or repaired at once.
- Rule 110 — Trails and access to working areas shall be properly maintained.
- Rule 111 — All excavations found along the trails shall be properly identified and marked, and if abandoned shall be sealed or backfilled.
- Rule 112 — Proper drainage system shall be constructed and be properly maintained.
- Rule 113 — The slope of benches shall be governed by the competence and stability of the ground such that the danger of sudden slide may be minimized.
- Rule 114 — When resuming excavations after heavy rains, all banks shall be inspected for cracks or ground movement which may indicate the beginning of a slide or rock sloughing and that proper warning signs shall be placed thereat.
- Rule 115 — It shall be prohibited to work on or under any overhanging bank. The overhang shall be brought down first before any kind of work is started.
- Rule 116 — All workers shall be instructed/trained to recognize signs of impending collapse or subsidence. In such cases, all concerned shall be notified and proper course of action shall be undertaken.
- Rule 117 — When two or more miners are working on different levels or in any position where there is danger of falling rocks or debris of any kind, they shall notify each other and take the necessary precaution before work is started.

B. Dredging and Sluicing Operation

- Rule 118 — Float, raft, pontoon or any place where workers are employed on or above water shall be provided with life jackets, lifelines, buoys and other similar gadgets.

- Rule 119 — Float, raft, pontoon shall be properly anchored to the river bank.
- Rule 120 — Float, raft, pontoon, boom, rope and anchor shall be regularly inspected and maintained in good working condition.
- Rule 121 — Dredging operation shall be strictly prohibited during inclement weather.
- Rule 122 — Workers engaged in loosening soil materials on steep slope surface or in conditions where there is possibility of falling shall be provided with lifelines.
- Rule 123 — During the process of washing down of loosened materials, no worker shall be allowed near the channel ways.

C . Hydraulicking Operation

- Rule 124 — The area within which hydraulicking is being carried out shall be marked with warning signs conspicuously posted around to prevent unauthorized entry.
- Rule 125 — Before any hydraulicking monitor is put into operation, all persons within the radius of the water jet shall leave the area. Only workers directly involved shall be allowed in the area.
- Rule 126 — All works involving shifting or repairing the monitor, replacement of the nozzle, as well as any work done within the radius of the water jet, shall be carried out only after the stop/check valve of the water line has been shut off.
- Rule 127 — The supply of water to the monitoring device shall be shut-off at each pause in operation, and the nozzle of the jet fixed in a position safe for all the persons working around it.
- Rule 128 — The belts of the joints in a pipeline shall never be tightened while pressure is on.

Rule 129 — It shall be prohibited to leave an operating hydraulic monitor without an operator.

Rule 130 — It shall be prohibited to place hands, or any other part of the body, or any other object in contact with the jet stream.

Rule 131 — No water supply pump shall be started until the operator of the hydraulic installation gives the order.

Rule 132 — Each high pressure hydraulic installation shall have a stop/check valve in its main water supply line at a distance not greater than fifty (50) meters (164 ft.) from the monitor.

Rule 133 — To ensure that the hydraulic installation will not burst under the pressure of water, the installation shall be provided with a safety pressure and relief valve. During operation, the pressure of the water shall be check from time to time.

Rule 134 — It shall be prohibited to go near a steep slope.

Rule 135 — Distance from the hydraulic monitor to the face shall not be less than the height of the face. When working a dense ground liable to cause falls of large lumps, distance shall be at least 1.2 times the height of the face.

Rule 136 — When working a face upwards, overhang that starts to develop shall be cut down in time with the water jet.

Rule 137 — Precaution shall be observed when washing down loose rocks along slopes.

Rule 138 — Movement over water deposited banks shall be prohibited until compactness and strength of the ground has been confirmed by thorough checking.

CHAPTER VI Health and Sanitation

Section 1. General Provisions

Rule 139 — Proper housekeeping shall always be maintained within the small-scale mining area, such as systematic arrangement of tools, proper disposal of garbage, etc.

Rule 140 — Unauthorized persons are prohibited to handle, possess, take out and use corrosive, poisonous or obnoxious substances.

Rule 141 — Oil, grease and greasy materials of any kind shall be kept away from compressed gas cylinder.

Rule 142 — Water and other liquids in the mill and laboratories shall be considered poisonous except those labelled "DRINKING WATER".

Rule 143 — Timbers and similar materials shall be piled neatly at a safe distance from any passageway so as not to pose danger or impede traffic.

Rule 144 — The "No Smoking" regulation shall be strictly enforced and complied with at all times.

Rule 145 — Routes leading to exits or outlets shall be cleared and freed from obstructions which may endanger and hinder the orderly passage of workers.

SECTION 2. SANITATION

Rule 146 — Any rubbish, scraps, or inflammable materials shall never be thrown anywhere within the contract area.

Rule 147 — Employees especially underground workers shall be required to use only the toilets which have been provided for.

Rule 148 — Work areas, including walkways, platforms and stairways shall be kept clean of rubbish, materials and spillages at all times to prevent slipping and tripping.

Rule 149 — The contract area shall be provided with drinking facilities, washrooms, showers, toilets, eating areas and first aid station/s.

Section 3. VENTILATION

Rule 150 — The contractor/permittee/association shall provide and maintain in all active underground workings an adequate supply of fresh air containing not less than 20% oxygen and not more than 0.5% carbon dioxide.

Rule 151 — The quantity of fresh air, including compressed air, supplied underground in any ventilated district, area or system, at any time at which the number of workers employed is at its maximum shall not be less than two (2) cubic meters per minute per man (2.0 cu.m./min./man) during the full period of work exclusive of the quantity requirement of equipment.

Rule 152 — Where toxic and explosive gases of any nature, which concentration will endanger the workers, are detected in mine workings, the Board or its equivalent shall be immediately notified by the quickest means of communications if condition persists.

Rule 153 — a. Allowable limits of gases in the mine air as follows:

Carbon monoxide (CO)	Not more than 0.005%
Methane (CH ₄)	Not more than 0.25%
Carbon dioxide (CO ₂)	Not more than 0.50%
Oxygen (O ₂)	Not less than 20.0%

Hydrogen Sulfide (H ₂ S)	Not more than 0.10%
Sulfur Dioxide (SO ₂)	Not more than 0.0005%

b. Allowable limits of dusts:

	THRESHOLD (mppcf)	UNITS (mg/m ³)
High Silica (50%), asbestos	5	
Medium Silica (5-50%), talc, mica	20	
Low Silica (5%), cement, slate, nuisance	50	
Total, all dusts	50	
Coal Dusts		
Average Shift Exposure	20	
Single Operations Exposure	40	
Toxic or nuisance compound		
Mercury		0.10
Lead		0.20
Antimony, arsenic, barium		0.50
Manganese		6.00
Iron, zinc, magnesium oxide, molybdenum		15.00
Radioactive Compounds		
Uranium (insoluble)		0.25
Vanadium (VO)	0.50	

Rule 154 — No internal combustion engine shall be allowed underground.

Rule 155 — When workers feel the symptoms of oxygen deficiency such as dizziness, vomiting, fainting, ringing sensation in the ears or presence of toxic or explosives gases, they shall immediately retreat and report such unventilated places to the safety inspector.

Rule 156 — Workers shall wear dust-foe respirator while working in dusty areas or in areas in which the dust cannot be immediately controlled.

Rule 157 — Waste, old timber or any form of refuse shall not be accumulated underground.

Section 4. HOUSEKEEPING

Rule 158 — Proper housekeeping shall always be maintained within the mine, i.e:

- a. Protruding nails shall be bent down or pulled.
- b. Oil, rags, wastes and the like must be placed in containers provided for.
- c. Spilled oil or grease and chemicals shall be cleaned up at once.
- d. Any rubbish, scraps or inflammable materials shall never be thrown anywhere within the mine except in designated trash areas.

SECTION 5. ILLUMINATION

Rule 159 — Places where winding, driving, pumping or other machinery is erected, in the proximity of which workers are working or moving about, shall be properly illuminated while in operation such that machinery can be distinguished clearly.

Rule 160 — Working areas shall be adequately illuminated. Provided, that torches, petroleum based lamps and other open flame lighting facilities shall be used only when there is adequate ventilation.

CHAPTER VII
Emergency Preparedness

Section 1. Fire Protection

Rule 161 — It shall be prohibited for anybody to tamper and/or play with any fire protection equipment.

Rule 162 — Any defect on any part of the fire protection system shall be reported and repaired at once.

Rule 163 — All places shall be provided with approved fire fighting equipment of adequate number and suitable types. Fire fighting equipment shall be frequently inspected/tested, properly maintained and prepared for immediate use.

Rule 164 — Fire fighting equipment shall be used exclusively for fighting fire.

Rule 165 — Adequate fire alarm device shall be provided.

Rule 166 — Any leak, breakage, or any defect on any part of the fire protection system like the water line, standpipe, fire extinguishers, and the like shall be reported and repaired at once.

Rule 167 — Every contract area shall have a properly trained central fire fighting brigade. Fire drills shall be conducted at least once a month.

Rule 168 — In the event of a fire, all personnel within the immediate vicinity shall be required to extinguish the fire with any available fire extinguishing device until the fire fighting crew arrives.

Rule 169 — Gate valves for fire waterlines from the source or reservoir leading to standpipe shall be locked to the open positions.

Rule 170 — Fire plans showing positions of the different fire fighting equipment and fire exits shall be conspicuously posted at strategic places.

Rule 171 — Fire fighting equipment shall be strategically located in such a way that these are easily accessible and can be used with full effectivity in time of emergency.

Rule 172 — All workers shall be made familiar with the location and operation of fire fighting equipment in their respective assignment.

Rule 173 — Adequate fire escape approved by the safety inspector shall be provided in all working places and in other places where people converge. Exits leading to fire escape shall be as direct as possible and shall be kept clear at all times.

Rule 174 — Main doors of building where people converge, whether inside or outside, shall open outward and shall not be locked or bolted, especially those leading to fire escape when there are people inside.

CHAPTER VIII

PLANT OPERATIONS

Section 1. GENERAL PROVISIONS

Rule 175 — Other safety rules and regulations cited elsewhere in this Order which are found applicable to plant operations are hereby embodied.

Rule 176 — Handling of hot or molten materials shall require fire proof body coverings.

Rule 177 — Workers assigned to work in bin or tank shall be required to wear a life line attached to a permanent support. Provided further, that life lines used have been tested for strength and suitability and approved by appropriate government agency.

Rule 178 — Workers assigned to work in confined space shall be closely supervised and required to wear the necessary personal protective equipment.

Rule 179 — Tailings pond in leaching operations shall be properly provided with adequate enclosures to prevent unauthorized entry. Warning signs shall be posted in conspicuous places.

Section 2. MOVING EQUIPMENT

Rule 180 — No workers shall be permitted to work or undertake repairs on any mill machinery while it is in operation.

Rule 181 — Operations, adjustments and repairs of mill machineries and equipment shall be undertaken by experienced and trained personnel only.

Rule 182 — Before starting any equipment for feeding, crushing, and grinding, the machinery/equipment operator shall see to it that the working area is cleared of men, materials and other obstacles.

Rule 183 — Drives and belts shall be adequately guarded and the self-draining floor shall be washed frequently to prevent accumulation of oil, grease and other waste materials.

Rule 184 — Passing beneath moving belts shall be prohibited.

Section 3. NON-MOVING EQUIPMENT

Rule 185 — It shall be prohibited for any person to enter through openings located below the bin containing hang-up materials. Adequate measures shall be provided for barring down hang-up materials.

Rule 186 — It shall be prohibited for any person to bathe or swim in the mill water reservoir, head tanks, water reclamation thickeners or tailings pond.

Rule 187 — Platforms and railings shall be kept in safe conditions.

Rule 188 — It shall be prohibited to direct stream water to electric power lines, electrical motor, panelboard, welding machine or piece of any electrical equipment.

Rule 189 — It shall be prohibited to store personal belongings on panelboards/circuit breakers.

**Section 4. PROTECTION AGAINST THE HANDLING OF
CHEMICALS AND OTHER LABORATORY
HAZARDS**

Rule 190 — Extra precautions shall be exercised in handling concentrated lime pulp and reagent solution.

Rule 191 — Workers handling and mixing mill reagents such as acids, frothers, collectors, cyanides, etc. shall be required to wear respiratory protective equipment and gloves.

Rule 192 — Cyanide and other toxic chemical spillages shall be removed immediately.

Rule 193 — Mill workers shall be required to know the antidotes for poisoning from cyanide and dangerous chemicals.

Rule 194 — Only authorized personnel shall be allowed to handle chemicals.

Rule 195 — Bottles containing acid or dangerous chemicals shall be clearly labelled.

Rule 196 — When diluting an acid with water, the acid shall always be poured slowly into the water with constant stirring of the mixture. Water should never be poured into the acid.

Rule 197 — Before breaking any line or container that has held a liquid or gas under pressure, it shall be isolated on either side of the break and that the area shall be cleared of other persons.

Rule 198 — Containers, pipes or hoses which had been used in handling and conveying poisonous materials shall either be destroyed or clearly marked, in accordance with Republic Act No. 6969 and its implementing rules and regulations.

- Rule 199 — In area where corrosive liquid, gases, fumes, mists or vapors disperse, adequate measures shall be taken to prevent damage to structural parts of the equipment or apparatus.
- Rule 200 — Receptacles shall be kept securely closed except during extraction of the contents.
- Rule 201 — Floor of rooms where corrosive liquids are handled or used shall be maintained as dry as possible.
- Rule 202 — Spillage or escaping corrosive acids and alkalies should never be allowed to be absorbed by sawdust, waste or other organic materials but shall be flushed out with water or neutralized with appropriate solutions.
- Rule 203 — Where corrosive liquids are handled or used, clean running water shall be readily accessible to all employees.
- Rule 204 — Certain red-label chemicals, like chlorates, nitrates and peroxides for laboratory use which are apt to cause violent explosions and produce fire shall be handled with caution and such chemicals shall be covered with a Permit for Possession and Purchase issued by the Philippine National Police upon proper indorsement of the Board or its equivalent.
- Rule 205 — Toxic chemicals used in mineral beneficiation process shall be covered with a Permit for Possession and Purchase issued by the concerned government agency upon indorsement from the Board or its equivalent.
- Rule 206 — Fuel systems of furnaces and burners shall be properly located and proper shut-off valves shall be installed.
- Rule 207 — Assay furnace shall be provided with appropriate chimney connector pipes for its entire length.
- Rule 208 — Water shall be prohibited within the immediate vicinity where molten metals are handled.
- Rule 209 — Floor area shall be kept clean and clear of obstruction if working near or carrying molten metal.
- Rule 210 — Quenching hot materials shall be done carefully.

Rule 211 — Molds for molten metals shall be kept dry or preheated before using.

Rule 212 — Personnel working with molten metal shall be required to wear spats, asbestos gloves, apron, goggles and full face protection.

Rule 213 — The workers shall be encouraged to use retort system during separation of gold from mercury prior to blow torching/refining.

CHAPTER IX ELECTRICAL AND MECHANICAL RULES

Section 1. GENERAL PROVISIONS

Rule 214 — For all electrical installations and equipment, the current provisions of the Philippine Electrical Code, Parts I and II as approved by the Institute of Integrated Electrical Engineers shall be followed.

Rule 215 — For all mechanical installations and equipment, the latest provisions of the Philippine Mechanical Engineering Code shall be followed unless specified otherwise.

Rule 216 — Operations and maintenance of mechanical and electrical machineries and equipment shall, in all cases, be done by duly authorized persons.

Rule 217 — Necessary inspection, test and maintenance records of mechanical and electrical machines shall be compiled and kept in a form prescribed by the Board or its equivalent.

Rule 218 — Safety device, tools and other apparatus used on any electrical or mechanical equipment or machineries shall be of the approved standard.

Rule 219 — Machinery, equipment and tools shall be maintained in such condition that workers shall not be endangered.

Rule 220 — Safety valves, governors, overspeed trips, automatic cut-outs, fuses and other similar safety protective device shall be

installed to protect equipment from damage. Such device shall not be tampered with or altered and shall not be repaired or adjusted at any time without authorization.

Rule 221 — Machineries and equipment shall be equipped with appropriate guards which provide adequate protection for workers against contact with moving parts, or which prevents access by employees to the dangerous areas during operation.

Rule 222 — Loose clothings, long sleeves shall not be worn near or around revolving/rotating machineries, equipment and parts.

Rule 223 — An updated plan shall be kept at the mine/office showing the location of all installed electrical/mechanical machinery and apparatus.

Rule 224 — No person shall be allowed to work on or with electrical equipment of any kind unless he has been previously instructed by an authorized person in connection with the performance of his duties.

Rule 225 — All machineries/equipment shall be constructed or installed in a stable ground/foundation.

Rule 226 — Warning signs shall be posted at points where there are possibilities of contact with live wires or moving parts.

Rule 227 — Only authorized workers shall be allowed to operate the electrical apparatus.

Section 2. ELECTRICAL SAFETY RULES

A. GENERAL SAFETY PRECAUTIONS

Rule 228 — Ground circuit shall be checked by the team leader before the start of every shift.

Rule 229 — Power lines that are no longer in use shall be removed or disconnected and properly secured from accidental connection.

Rule 230 — All electrical apparatus shall have adequate safeguard against fire and electrical shocks in case of failure of insulations.

Rule 231 — All electrical construction and/or installations shall be made in accordance with the plans/specifications duly approved by the Board or its equivalent and shall be under the supervision of a competent electrical engineer and/or licensed master electrician.

Rule 232 — Installations of generators, meters, control equipment conductors, exposed live wires and moving parts shall be properly insulated and guarded.

Rule 233 — Cover guards, warning signs and other safety devices shall be temporarily provided before leaving an unfinished job.

B. CONTROL CENTERS

Rule 234 —centers. Adequate illumination shall be provided both at the front and rear side of switchboards.

Rule 235 — Entrances to the backspace of any switchboards with exposed live parts shall be provided with barriers that are kept locked.

Rule 236 — Insulating mats or platforms shall be provided in front of switchboards.

Rule 237 — Only duly authorized persons shall be allowed to work on switchboards. Warning signs shall be posted.

Rule 238 — Passageways and working spaces shall be cleared of any physical barrier that will prevent easy access to it.

Rule 239 — Good housekeeping shall always be maintained in control

C . MOTORS, GENERATORS, AND CONTROLLING DEVICES

Rule 240 — Switch control shall be installed within sight of the motor operator and the equipment he operates.

Rule 241 — The control device of motors shall be placed at a safe distance from combustible materials.

Rule 242 — Motors shall be of the type that accords with the conditions where these are installed.

Rule 243 — Overload device and starting controls shall not be used as circuit breakers.

Rule 244 — Controls shall be identified or labelled and shall be equipped with indicating lights or meters to show when the motor loads are energized.

D. WORKING ON ENERGIZED EQUIPMENT

Rule 245 — Electrical rubber gloves, shields and other necessary safety equipment shall be used by employees working on energized electrical conductors or equipment operating at more than one hundred ten (110) volts to ground.

Rule 246 — In tunnels and manholes, no work shall be done on any energized electrical conductor operating at one hundred ten (110) volts to ground unless two or more experienced workers are present.

E. TESTING AND ENERGIZING ELECTRICAL EQUIPMENT

Rule 247 — The circuit shall be checked completely by a competent electrician before power is applied for the first time.

Rule 248 — Before starting to test-run electrical equipment, branch circuit protective device and circuit grounding system shall be checked if properly installed and any waste materials and tools shall be removed.

Rule 249 — Before energizing the power line of an equipment, the protective device and controllers shall first be checked for proper setting and operation.

- Rule 250 — Testing and energizing shall be carried out with proper instruments and tools such as megger, ammeter, voltmeter, insulating stick, insulation gloves, and the like for protection against electrical hazard, accidental damage or injury.
- Rule 251 — The capacity of motors and testing instruments shall be checked before use.
- Rule 252 — Approved tester shall be used in testing grounded or faulted windings and commutator segment assembly.
- Rule 253 — Circuits shall be tested with an approved testing equipment before energizing.
- Rule 254 — Before breaking the circuit of current transformer secondaries, the loads shall be grounded and effectively short-circuited between the transformer coil and the points at which the circuit is to be broken.

F . REPAIRS AND MAINTENANCE

- Rule 255 — Power shall be shut off when making examinations, repairs or alterations of electrical installations.
- Rule 256 — Warning signs shall be posted in a conspicuous place when repairing and working on electrical circuits, equipment and other electrical installations.
- Rule 257 — Repairs and maintenance shall be made in accordance with standard procedures and manufacturers' specifications.
- Rule 258 — Removal and replacement of fuses shall be done with a fuse holder or with approved rubber gloves. Fuses and disconnectors shall not be pulled out unless loads on the circuit are removed. Only fuse in a cartridge shall be used.
- Rule 259 — During storm, it shall be prohibited to work or stay under any high voltage distribution lines or transmission lines.

Rule 260 — Workers shall be prohibited from wearing rings, watches or metal chains and such other articles which may be caught by moving parts of machineries or which may come in contact with electrical circuits.

Rule 261 — Covers of protective device of electrical circuits and machinery such as enclosed-type switches, circuit breakers and starters shall always be closed before switching "on". 1

G. WORKING ON ELECTRIC POSTS OR POLES

Rule 262 — All electrical posts shall be of good quality.

Rule 263 — Before starting to work on live circuits in electric posts, rubber blankets or shields shall be placed over adjacent ground wires for protection while working on defective wires.

Section 3. MECHANICAL SAFETY RULES

A. GENERAL SAFETY PRECAUTIONS

Rule 264 — Machines having grinding, shearing, punching, cutting, rolling, mixing or similar action shall be properly guarded to prevent persons from accidentally coming into contact with them.

Rule 265 — All machineries shall not be operated unless properly guarded and in good working condition.

Rule 266 — No person shall be permitted to operate machines or tools unless duly authorized and equipped with appropriate personal protective devices.

Rule 267 — Safety and indicating devices/s shall be properly maintained and checked periodically for damage and deterioration.

B. MECHANICAL EQUIPMENT

Rule 268 — On cutting machines:

- a. The table shall be moved with the work as far away from the cutter as possible while making adjustments/preparations;
- b. Heavy cut or feed shall be avoided when using a vertical cutting machine;
- c. The speed shall be checked and feeding shall be done against the direction in which the cutter is rotating;
- d. Hands shall be kept away from the cutter when cutting;
- e. The operator should never reach over a revolving cutter, especially at the side of the cutter which cuts into the work;
- f. Brush shall not be used in removing chip; and
- g. Use water during cutting operations.

Rule 269 — On pumps:

Exposed rotating couplings of pumps shall be adequately guarded and after repair/maintenance the guard shall be re-installed before putting into operation.

Rule 270 — On compressors:

- a. All gasoline or diesel engine driven compressors shall be provided with suitable length of exhaust pipe.
- b. Header valves shall be closed and all relief valves shall be opened when undertaking repairs or adjustments on compressor. Starting equipment shall be tagged and locked out.

Rule 271 — On other stationary equipment:

No repairs or adjustments shall be made on any machinery until the power has been cut off and the machinery securely blocked against all motion.

Rule 272 — On Internal Combustion Engine:

The American Society of Mechanical Engineers (ASME) and Philippine Mechanical Engineering Code shall govern the inspection and installation of internal combustion engines.

C . RAILINGS AND TOEBOARDS

Rule 273 — On construction:

1. Railing guards:
 - a. Railing guards of wood, pipe metal structure or other material of sufficient strength shall be constructed in a permanent and secure manner.
 - b. Sharp corners of railing guards shall be rounded and smoothed;
 - c. Standard railing guards shall be at least one (1) meter (3 ft. 3 in.) in height; and
 - d. Standard railing guards shall have posts not more than two (2) meters (6 ft. 6 in.) apart and an intermediate rail halfway between top rail and the floor.

2. Toeboards:

Toeboards shall be at least fifteen (15) centimeters (5.9 in.) in height, made of wood, steel or other suitable materials and securely fastened in place.

Rule 274 — On locations and equipment:

Standard railings and toeboards provided for in the preceding rules thereof shall be placed in proper locations or in such other locations as may be prescribed by the enforcing authorities.

1. Overhead walks, runways and platforms:

- a. Walkways; runways, working platforms and open side floor two (2) meters (6 ft. 6 in.) or more above floor or ground level, except small platform used for motors and similar equipment which do not afford standing space for persons, shall be guarded on all open sides by standard railings and toeboards; and
- b. Where railings may induce workers to take "shortcuts" from long detour, additional railing components shall be provided where stairway is not possible.

2. Agitators, Mixing Machines and Drum Mixers:

- a. When the top of an open agitator tank, heater tank or paddle tank is less than one (1) meter above the floor or working level, adequate standard railings shall be installed on all open sides.

- b. Service walkways for access drives or valves, or for taking samples shall be provided on both sides with standard railings and toeboards.

3. Crushers, Grinding Mills and Pulverizers:

All moving parts of crushers, grinding mills and pulverizers, which constitute a hazard, shall be surrounded by standard railing when enclosure is impractical.

4. Ball, Rod Tube and Compartment Mills

Both sides of the ball, rod, tube or compartment mills with bottoms less than two hundred forty (240) centimeters (7 ft. 10 in.) above the floor level shall be provided with guards or railings.

5. Vats and Tanks

Vats, pans and open tanks containing hot, corrosive or poisonous liquid with openings on top less than one (1) meter (3 ft. 3 in.) above the floor or working level shall be guarded on all sides by enclosure or standard railings.

6. Furnace, Kilns and Ovens

- a. Pits or floor openings in furnaces and kilns shall be protected either by covers or by railings and toeboards.
- b. Platforms, walkways and stairways on furnaces, kilns and ovens shall be provided with standard railings and toeboards on all sides.

7. Other machines not especially mentioned such as classifier, flotation cells, etc. shall be properly guarded to prevent workers and materials from accidentally falling into or getting in contact with the moving parts of the machine.

CHAPTER X TRAFFIC SAFETY RULES AND REGULATIONS

Rule 275 — Effective means of traffic control shall be provided whenever the unregulated movement of vehicular traffic constitute a hazard to employees and equipment.

Rule 276 — Traffic control procedures shall conform with the current regulations of the Land Transportation Office (LTO) with emphasis on the following but not limited to:

- a. All drivers must know, understand, obey and observe traffic rules and regulations. They shall heed all traffic and road signs.
- b. Driving under the influence of intoxicating liquor and/or prohibited drugs is strictly prohibited.
- c. Drivers shall observe road courtesy and speed limits at all times.
- d. No person shall park his motor vehicle that may obstruct or impede the passage of any vehicle, while loading and unloading.
- e. No vehicle shall cross nor run over unprotected electric lines, and fire hoses.
- f. No driver shall allow any person to hang on to, the outside or rear end of his moving vehicle or allow any person on a bicycle, roller

skates or other similar device to hold fast or hitch to his moving vehicle.

CHAPTER XI

Materials Storage and Handling

Section 1. Storage

Rule 277 — Highly combustible materials such as paints, lacquers, chemicals and the like shall be stored separately and properly.

Rule 278 — Good housekeeping shall always be observed.

Rule 279 — Fire protective equipment shall always be adequately provided.

Rule 280 — Smoking shall be absolutely prohibited in storage areas where flammable materials are stored and a sign to that effect shall be conspicuously displayed.

Rule 281 — In storing compress gas cylinder the following shall be observed:

- a. Cylinder shall be stored in a safe, dry, well-ventilated place prepared and reserved for the purpose. Flammable substances such as oil, volatile liquids, shall not be stored in the same area.
- b. Cylinders of oxygen shall not be stored in rooms closed to cylinders containing flammable gases. Unless these are stored apart, oxygen cylinders shall be separated by a fire resistant partition.
- c. Acetylene and liquified fuel gas cylinder shall be stored with the valve end up.
- d. Acetylene storage rooms and buildings shall be well ventilated and open flames shall be prohibited. Such rooms shall hold no other equipment, objects or paraphernalia.

- e. Cylinders are not designated for temperatures in excess of 54°C (130°F). Accordingly, these shall not be stored near sources of heat, such as radiators or furnaces or near highly flammable substances like gasoline.
- f. A direct flame or electric arc shall never be permitted to come in contact with any part of a compressed gas cylinder.

Rule 282 — Storage of flammable liquids in open container shall not be permitted. Approved containers for flammable liquid shall be closed after each use.

Rule 283 — Poisonous Substances, acids, alkalis:

- a. Toxic and other poisonous substances and chemicals used in processing shall not be stored near medicines and foods. Proper labelling shall be done and these shall be kept out of reach of children.
- b. Substances such as acids and alkalis shall always be considered dangerous and poisonous. Direct contact with the skin should be avoided and vapors/fumes should not be inhaled. Users and non-users shall be properly informed of harmful effects, symptoms and antidote of such substances.

SECTION 2. HANDLING

Rule 284 — In lifting heavy or awkward load the following procedures shall be followed:

Use the proper method of lifting and get help for heavy or awkward load.

- a. Be certain the load is within ones lifting capacity.

- b. Check the path of travel for hazards and adequate lighting.
- c. Obtain good footing.
- d. Bend at the knees to grasp the weight of the object.
- e. Keep ones back in an upright position.
- f. Get a firm hold.
- g. Lift gradually by straightening the legs.

Rule 285 — When two or more men are lifting objects together, one man shall give the signal to lift or lower in unison. They shall keep in step when carrying.

Rule 286 — Wheelbarrows shall be pushed, not pulled.

Rule 287 — Materials shall be inspected before handling.

Rule 288 — Specific safety precautions in accordance with safety standards shall apply when using and steering rope, rope slings, wire rope, chain and chain slings.

Rule 289 — Only trained workers shall load or unload tanks containing flammable liquids.

Rule 290 — Compressed Gas Cylinders:

- a. Numbers or marks stamped on cylinders shall not be removed.
- b. Cylinders shall be rolled on bottom edge but never dragged.
- c. Cylinders shall be protected from cuts or abrasions.
- d. Compressed gas cylinders shall not be lifted by any electromagnetic devices. Where cylinders must be handled by a crane or derrick, these shall be carried in a cradle or similar device.
- e. Cylinders shall be not be dropped nor be made to strike against each other.
- f. Cylinders shall not be used as rollers, supports, or for any purposes other than to contain gas.
- g. The safety device of cylinders shall not be tampered.

- h. Cylinders shall always be considered full and handled with care.
- i. Cylinders shall always be provided with cover when transporting.

Rule 291 — Objects with specific shapes:

- a. Boxes shall be handled by grasping the alternate top and bottom corners and draw a corner between the legs.
- b. Locked materials shall be grasped at opposite corners.
- c. Sheet metal shall be handled with leather gloves, hand leathers, or gloves with metal inserts. Bundles of sheet metal shall be handled with power equipment.
- d. Window glass or other sheet glass shall be handled with gloves or hand leathers while the wrists and forearms shall be covered with long leathered sleeves.
- e. Long objects, like pipe, bar stock, or lumber shall be carried over padded shoulder, with the fronthand held as high as possible except when passing under low power lines.
- e. Rule 292 — One shall keep hands free of oil and grease when handling materials.

CHAPTER XII MISCELLANEOUS SAFETY RULES

Section 1. USE AND CARE OF HAND TOOLS

Rule 293 — Defective tools shall not be used. These shall be reconditioned or replaced.

Rule 294 — Only appropriate tools for a certain job shall be used.

Rule 295 — One shall carry tools properly.

SECTION 2. CONSTRUCTION AND INSTALLATION OF PORTABLE LADDERS

Rule 296 — Portable ladder shall:

- a. Be placed on secured footing, steadied by a man or secured with a rope.
- b. Be placed on a position such that the footing is approximately one-fourth ($\frac{1}{4}$) the length of the ladder from the vertical plane of the support.
- c. Not be used as walkway or as scaffold.
- d. Never be installed in front of doors that open towards the ladder unless the door is locked, blocked, or guarded.
- e. Not be placed near live electric wiring installation or against any operational piping where damage might be incurred.
- f. Not be used when defective. It shall be tagged, or marked so that it shall be repaired, replaced or discarded.
- g. Be kept clean and free of dust and grease.

Section 3. PIPING INSTALLATIONS

Rule 297 — Before work is done on a pipeline, the line shall be shut off, valves locked or tagged and the section of the line relieved of pressure and drained.

Section 4. Working on Top of Platform and Scaffolds

Rule 298 — When men are working overhead:

- a. No person shall be permitted to pass or stay underneath.
- b. Materials and tools shall never be thrown or freely dropped, but shall be lowered with a rope.

Rule 299 — It shall be prohibited to leave loose materials such as bottles, cans, metals and wood scraps along passage ways, platforms or scaffolds.

Rule 300 — Before working on a scaffold or platform of any description, one shall personally see to it that the supports are properly erected and secured.

Rule 301 — Platforms and scaffolds shall be provided with adequate rail guards.

Rule 302 — Openings along passageways where platforms and scaffolds are erected shall be adequately guarded.

Section 5. Road Works

Rule 303 — The following shall govern road works:

- a. Adequate warning signs shall be provided at approaches of at least ten (10) meters (32 ft 9 in.) from the working areas.
- b. Adequate detour signs shall be provided when road is under repair or is not passable.

SECTION 6. Welding and Cutting Operations

Rule 304 — Only authorized and experienced persons shall operate and use welding and cutting equipment.

- Rule 305 — Welding or cutting operation on container filled with flammable substance is strictly prohibited.
- Rule 306 — Workers directly engaged or assisting in welding or cutting operation shall be provided with proper and adequate personal protective equipment.
- Rule 307 — Welding and cutting operations that are carried out in places where persons other than the welders are working shall be isolated by a suitable, wall/screen of non-combustible material.
- Rule 308 — When welding or cutting operation is performed in a confined area where there is danger of inhalation of any toxic fumes, gases, or dusts, adequate ventilation shall be provided.
- Rule 309 — Torch shall not be lighted nor be struck when gases or vapors are present.
- Rule 310 — Welders shall always be equipped with appropriate portable fire extinguishers when assigned to perform welding or cutting jobs.
- Rule 311 — Welding machines shall be located at a safe distance of at least ten (10) meters (32 ft. 9 in.) from any tank or wash tank containing oil.
- Rule 312 — Defective welding machine shall be reported immediately to supervisor.
- Rule 313 — Torch lighter shall be used for lighting.
- Rule 314 — Every motor generator set or transformer used for are welding and cutting operations shall be provided with an electrical safety disconnecting switch of adequate ampere rating which is readily accessible in case of emergency. Portable welding machine shall have quick detaching plug.
- Rule 315 — The conditions surrounding the work performed by are welding and cutting process shall be properly checked to prevent the hazard of electric shock by:

- a. Keeping the floor or ground surface dry. If conditions under the foot are wet, a dry electrical non-conducting platform shall be used.
- b. Instructing the operator to keep exposed parts of his body from getting into contact with the work, the electrode and holder or any part of structure that is electrically grounded.
- c. Requiring the operators to keep their clothing, gloves and feet as dry as possible.

Rule 316 — In case of emergency where it is necessary to do are welding or cutting under wet conditions, rubber boots and rubber gloves shall be worn.

Rule 317 — Electrode holder shall be insulated. When electrode holder is not in use, the electrode shall be removed from the holder and the electrode holder hung or laid on a dry, non-conducting surface where it will not come in contact with workers or electrically-conducting materials.

CHAPTER XIII **Penal Provision**

Rule 318 — Any contractor/permittee/operator/worker who violates any of the provisions of this Order or commits any unsafe act that will endanger himself, other persons and/or property shall be penalized by a fine of not less than P1,000.00 nor more than P10,000.00 or suspension/cancellation of the permit/contract or both upon the discretion of the Board or its equivalent.

Rule 319 — Any person who willfully obstructs, harasses and/or threatens the Board or its equivalent in the performance of their duties shall be fined or imprisoned upon conviction or both at the discretion of the court.

CHAPTER XIV
Additional Provisions

The rules stated herein shall be applied and enforced without prejudice to other existing laws, rules and regulations on occupational safety and health.

CHAPTER XV
Final Provisions

If any rule of this Order is held or declared unconstitutional or invalid by a competent court, the other rules thereof shall continue to be in force as if the rules so annulled or voided had never been incorporated in this Order.

All rules and regulations or parts thereof in conflict or inconsistent with any of the rules of this Order are hereby repealed or modified accordingly. This Order shall take effect fifteen (15) days after publication in a newspaper of general circulation.

(SGD.) VICTOR O. RAMOS
Secretary

Recommended by:

HORACIO C. RAMOS
Director
Mines and Geosciences Bureau

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