



KHYBER PAKHTUNKHWA

Published by Authority

PESHAWAR, TUESDAY, 25th OCTOBER, 2022.

GOVERNMENT OF THE KHYBER PAKHTUNKHWA
MINERAL DEVELOPMENT
DEPARTMENT.

NOTIFICATION

Dated Peshawar, the 08th September, 2022.

No.SO(Appcal)/MDD/6-18/MS&R/2022/6961-67.-In pursuance of sub-section (1) of section 68 of the Khyber Pakhtunkhwa Mines Safety, Inspection and Regulation Act, 2019 (Khyber Pakhtunkhwa Act No. V of 2020), and in exercise of powers conferred by section 65 of the Act *ibid.*, the Government of Khyber Pakhtunkhwa hereby publish the following proposed draft rules for the information of persons likely to be affected thereby and notice is hereby given that the said rules together with any objections or suggestions with respect thereto, which may be received by the Secretary to Government of the Khyber Pakhtunkhwa, Minerals Development Department within a period of three months from the date of publication of this notification in the official Gazette shall be taken into consideration after the expiry of the said period:

THE KHYBER PAKHTUNKHWA METALLIFEROUS MINES RULES, 2022.

CHAPTER-I PRELIMINARY

1. **Short title, application and commencement.**---(1) These rules may be called the Khyber Pakhtunkhwa Metalliferous Mines Rules, 2022.

(2) They shall apply to every mine of whatever description other than a coal, oil and gas.

(3) They shall come into force at once.

2. **Definitions.**---(1) In these rules, unless there is anything repugnant in the subject or context-

- (a) **"Act"** means The Khyber Pakhtunkhwa Mines Safety, Inspection and Regulation Act, 2019 (Khyber Pakhtunkhwa Act No. V of 2020);
- (b) **"approved safety lamp"** and **"approved electric torch"** mean, respectively, safety lamp and an electric torch manufactured by such firm and of such type as the Chief Inspector may from time to time specify by notification in the official Gazette;
- (c) **"average employment"** means the average per day employment during the preceding year of the total employment in all excavations and specified ancillary facilities within the specified mine boundaries (obtained by dividing the number of days men worked by the number of working days excluding the rest days and other non-working days);
- (d) **"auxiliary fan"** means a forcing fan or an exhausting fan, used belowground wholly or mainly for ventilating a working face or faces or dead ends;
- (e) **"Committee"** means a committee constituted under section 18 of the Act;
- (f) **"explosive"** shall have the same meaning as is assigned to the term in the law relating to explosives;
- (g) **"gas"** includes fume or vapour;
- (h) **"haulage road"** means any part of a passage or gallery belowground which is maintained in connection with the working of amine;
- (i) **"material"** includes rock, debris, stone, mineral, ore or any other material;

- (j) **"mine foreman"** means a person possessing a Foreman's Certificate of Competency and appointed by the mine manager in writing to perform the duties of supervision or control of a mine or part thereof;
- (k) **"mining mate"** means a person possessing Mate's Certificate of Competency and appointed by the mine manager in writing to perform the duties of a mining mate under these rules;
- (l) **"misfire"** means the failure to explode of an entire or partly charge of explosives in a shot-hole;
- (m) **"month"** means a calendar month;
- (n) **"official"** means a person appointed in writing by the owner, agent or mine manager to perform duties of supervision in a mine or part thereof and includes a mine manager, an under manager, a mine foreman, a mining mate, an engineer and a surveyor;
- (o) **"permitted explosive"** means an explosive, manufactured by such firm and of such type, as the Chief Inspector may, from time to time, specify by notification;
- (p) **"public road"** means a road, maintained for public use, under the jurisdiction of Government, Federal Government or, as the case may be, any local authority;
- (q) **"Section"** means a piece, part or a feature of a mine plan or map;
- (r) **"signalman"** means a person, appointed in a mine, to transmit signals;
- (s) **"support"** includes timber-work, rock bolting, concrete lining, masonry work, chocking, pack walls, sand packing, iron-work or any other form of support used in mines;
- (t) **"tub"** includes a wagon, car, truck, cage, skip, bucket or any other vehicle, machine for conveying material, but does not include a railway wagon; and

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- (u) "ventilating district" means such part of a mine belowground which has an independent intake airway commencing from a main intake airway and independent return airway terminating at a main return airway and, in the case of mine or part thereof which is ventilated by natural means, the whole mine or part thereof.

(2) Words and expressions used in these rules but not defined shall have the same meanings as are assigned to them under the Act.

CHAPTER-II

PLANS

3. **Provisions of Chapter-II not to apply to certain mines.**---Nothing in this Chapter shall be deemed to apply-

- (a) to any mine in which the workings do not extend under the superjacent ground; or
- (b) to any mine in which excavation is being made for prospecting purposes only:

Provided that the Chief Inspector may direct that this rule shall apply to any such mine to such extent, as he may deem fit.

4. **Owner, agent or mine manager required to keep plan of the mine.**---

(1) The owner, agent or mine manager shall keep a plan and Sections, properly inked on durable paper, of the workings of the mine on a scale of not less than-

- (a) 1: 1000.....for underground working plan;
- (b) 1: 1000.....for quarries working plan;
- (c) 1: 1000.....for ventilation plan; and
- (d) 1:5000.....for general surface plans of entire leased area:

Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit or require the plans to be prepared on any other suitable scale best fit to the mine workings.

(2) The plans, required by sub-rule (1), shall be kept in the office at the mine. They shall be accurate and shall be maintained up-to-date not more than six months previously:

Provided that where any mine is abandoned or the working thereof has been discontinued, the plan shall, before such abandonment or immediately after such discontinuance, be brought up-to-date to the time of abandonment or discontinuance.

(3) Where any mine or any considerable part of mine is abandoned or the working thereof has been discontinued over a period, exceeding six months, the person who was the owner of the mine, at the time of the abandonment or discontinuance, shall, within two months after the abandonment or discontinuance, send to the Chief Inspector and Inspector concerned, true and accurate copy of the plans and Sections of the workings of the mine up to the time of abandonment or discontinuance:

Provided that if a change of ownership occurs after the abandonment or discontinuance and before the expiry of the two months, such plans and Sections shall, forthwith, be sent to the Chief Inspector and Inspector concerned.

5. Requirements of the plan.--(1) Every plan or Section, prepared or submitted in accordance with the provisions under these rules, shall show the position of the workings at the time of the last survey by a dotted line, drawn through the ends of the workings. The dotted line shall be marked with the date of the last survey, the name of the mine and of its owner.

(2) The scale shall be shown on the plan and Sections and the magnetic meridian with date shall be shown on the plan. The plans and Sections shall also show all shafts, inclines, drives, crosscuts, winzes, raises, excavations, abandoned area and any tunnels and passages connected therewith.

(3) They shall also show the boundaries of the underground mineral title, where possible and all important surface features within the boundaries such as railways, public roads, rivers, canals, streams, reservoirs, subsidence and buildings which overlie any part of the workings and also the general strata of the veins or mineral deposits, with their dips at different points and the dislocation of the strata, if any.

6. Owner, agent or mine manager to produce plan to the Chief Inspector or an Inspector.---The owner, agent or mine manager shall, at any time on the request of the Chief Inspector or the Inspector concerned, produce to him at the office such plans and Sections, and also on the like request, mark on such plans and Sections the then state of the workings of the mine and the Chief Inspector or the Inspector concerned shall be entitled to examine plans and the Sections and for official purposes to make or have a copy made of any part thereof, respectively.

7. Types of plans and Sections.---The owner, agent or mine manager shall keep the following plans and Sections, namely:

- (a) a surface plan, showing the features within the boundaries, such as telephone, telegraph or power transmission line, water main, railway, public road, river, watercourse, reservoir, tank, bore-hole, shaft and incline opening, opencast working, subsidence and building on the surface;
- (b) an underground plan, showing the position of the workings of the mine belowground, every bore-hole and shaft with depth, cross cuts, winzes, raises, excavations, goafs, abandoned places and every tunnel and air passage, connected therewith, every pillar or block of mineral left for the support of any structure on the surface, underground magazines, if any, every important surface feature within the boundaries, such as railway, road, river, stream, watercourse, tank, reservoir, opencast working and building which is within three hundred (300) meters of any part of the workings measured on the horizontal plane, general strike of the veins, a mineral beds or deposits, position of every dyke, fault and other geological disturbance with the amount and direction of its throw and shall be marked with the date of the last survey:

Provided that the Chief Inspector may, by an order in writing and subject to such conditions, as he may specify therein, approve any other method of showing the up-to-date position of the working of the mine;

- (c) a ventilation plan showing the system of ventilation in the mine and in particular the general direction of air-current, every point where the quantity of air is measured, every air-crossing, ventilation door, stopping and every other principle device used for the distribution of air, every water-sump with dimensions and other particulars of construction, every pumping, telephone, every haulage and travelling roadway and all water-logged workings belowground lying within fifty (50) meters of any part of the workings measured in any direction.

Note: For the purpose of ventilations or escape ways, the Chief Inspector on the request of mine owners of adjoining area, by order in writing direct the adjacent mine owners to provide facilities for ventilation of underground working and escape ways if it is deemed, necessary.

- (d) a geological plan of the leased out area showing the lease boundaries, the veins or mineral beds or deposits overlies or run parallel to one another, the settled boundary of the mine, or where the boundary is in dispute, the boundaries claimed by the owner of the mine adjacent to the disputed boundary, the workings both above and belowground of all adjacent mines as are situated within fifty (50) meters. The position of these workings shall also be maintained up-to-date within six months.

8. Owner, agent or mine manager to facilitate the surveyor.---The owner, agent or mine manager shall give all reasonable facilities to the surveyors of its adjacent mine to carry out the surveys and leveling required for preparing mine or geological plan:

Provided that the Chief Inspector may, by an order in writing, require such additional details to be shown on the plans and Sections required to be kept under these rules or the preparation and maintenance of such other plans and Sections showing such details and on such scale and within such time as he may specify in the order.

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9. **Copies of plans and Sections to be submitted.**---(1) The owner, agent or mine manager shall, on or before the 30th June of every year, submit to the Chief Inspector and the Inspector concerned, two up-to-date copies of the plans maintained in updated form.

(2) The Chief Inspector may, by an order in writing, require the owner, agent or mine manager to submit to him within such time such plans and Sections as he may specify in the order.

10. **Survey instruments and materials.**---The owner, agent or mine manager shall provide accurate and reliable survey instruments and materials for the proper carrying out of all surveys and leveling works and for the preparation of plans and Sections required under these rules and no other instruments shall be used in connection with any such survey or leveling work.

11. **Preparation of plans by surveyors.**---(1) The plans required to be kept under sub-rules (1) and (2) or to be sent under sub-rule (3) of rule 4 of these rules shall be prepared by or under the supervision of a duly appointed competent surveyor who shall sign and put date on it and be responsible for their accuracy.

(2) If any question arises that whether any person so appointed under sub-rule (1), is not competent to perform the duties of a surveyor, the decision of the Chief Inspector shall be final.

(3) If the surveyor fails or omits to show any part of the workings or allow the plans or Sections to be inaccurate, he shall be guilty of a breach of these rules. Nothing in this sub-rule shall, however, exempt the owner, agent or mine manager of their responsibility to ensure that every plan or Section prepared, kept or submitted under these rules or by any order made thereunder is correct and maintained up-to-date.

12. **Plans to be checked on change of ownership or on re-opening.**---(1) When there is a change in the ownership of a mine or where a mine or part thereof is reopened or where in any mine or part thereof it is intended to start any extraction or reduction of pillars or blocks of minerals, the owner, agent and mine manager shall ensure that the plans of the mine or part thereof are accurate.

(2) If any doubt arises as to the accuracy of the plans in any respect, he shall have accurate plans prepared afresh before any drivage or other work of development or of extraction or reduction of pillars is commenced.

(3) If the Chief Inspector is of the opinion that any plan or Section prepared, kept or submitted under these rules is inaccurate, he may, by an order in writing, require a fresh survey to be made and a new plan to be prepared within such time as he may specify therein.

(4) If the plan or Section required to be prepared under sub-rule (3) is not prepared within the time specified in the order or to the satisfaction of the Chief Inspector or the plan is not prepared or brought up-to-date as required under these rules, he may get the plan prepared by any other agency and the cost thereof, as certified by the Chief Inspector, shall be defrayed by the owner and recoverable from him as arrears of land revenue.

CHAPTER-III MANAGEMENT

13. **Qualifications and appointment of mine managers.**—(1) The mine manager appointed under section 20 of the Act, shall be a person who-

- (a) possesses mining engineering degree from a recognized University;
- (b) he shall be of not less than twenty three years of age;
- (c) is paid by and is directly answerable to the owner or agent;
- (d) has had practical experience in an underground mine for a period of not less than three years:

Provided that-

- (i) no person shall act as manager of a mine, the average monthly output of which exceeds 2500 tons, unless he holds a First Class Manager's Certificate granted under the Act or the relevant rules thereunder governing conduct of examination for the grant of Competency Certificate;

- (ii) no person shall act as manager of a mine, the average monthly output of which exceeds 600 tons but less than 2500 tons, unless he holds First or Second Class Manager's Certificate granted under the Act and the rules mentioned in clause (i); and
- (iii) no person shall act as manager of a mine, the average monthly output of which does not exceed 600 tons, unless he holds a First or Second Class Manager's Certificate or a Manager's Permit granted under the Act and the rules mentioned in clause (i):

Provided further that no person shall act or continue to act or be appointed, as manager of a mine or mines where work is being carried on by a system of deep-hole blasting and or with the help of heavy machinery for the digging, excavation and removal, etc., of earth, stone, mineral or other material unless he holds a First Class Manager's Certificate granted under the Act and the rules mentioned in clause (i):

Provided also that the Chief Inspector may, by order in writing, authorize to act as manager of any mine or mines for a specified period, any person whom he may consider competent, notwithstanding that such person does not possess the qualification prescribed in that behalf and may by a like order, revoke any such authority at any time and such order shall be final.

14. No person to act as manager of more than one mine without previous permission.—(1) No person shall act or be appointed, as manager of more than one mine except with the previous permission in writing of the Chief Inspector and subject to such conditions, as he may specify therein. No such permission shall have effect for a period exceeding twelve months, unless renewed.

(2) The Chief Inspector may at any time, by an order in writing, vary or revoke any such permission where the circumstances under which the permission given under sub-rule (1), was granted have altered or the Chief Inspector finds that the mine manager has not been able to exercise effective supervision in the mines under his charge.

15. Power to authorize a person to act as mine manager.---Where by reason of absence or for any other reason, the mine manager is unable to exercise daily personal supervision or is unable to perform his duties under the Act or these rules or orders made thereunder, the owner, agent or mine manager shall authorize in writing a competent person to act as manager of the mine:

Provided that—

- (a) such person holds a Manager's Certificate or Sirdar's Certificate and have at least two years practical experience in mining;
- (b) no such authorization shall have effect for a period in excess of thirty days, except with the previous consent in writing of the Chief Inspector and subject to such conditions, as he may specify therein, nor without a like consent shall a second authorization be made to take effect upon the expiry of the first. The Chief Inspector shall not permit any such authorization to extend over a period exceeding sixty days;
- (c) the owner, agent or mine manager, as the case may be, shall forthwith send by registered post to the Chief Inspector and the Inspector concerned a written notice intimating that such an authorization has been made, and stating the reason for the authorization the qualifications and experience of the person authorized, and the date of the commencement and ending of the authorization; and
- (d) the Chief Inspector or the Inspector concerned may, except in the case of a person possessing the qualifications and experience, by an order in writing, revoke any authority so granted under this rule.

16. Competent person authorized to have the same responsibilities as that of a mine manager.---(1) The competent person so authorized under rule 15 shall, during the period of such authorization, has the same responsibilities, discharge the same duties and be subject to the same liabilities as the mine manager.

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(2) Nothing in sub-rule (1), shall confer on the owner, agent or mine manager authorized temporarily under rule 15, the right to authorize, during the period of any such authorization, any person not duly qualified to manage the mine, except in case of illness or other causes due to which the mine manager, authorized under rule 15, has no control or except with the previous written permission of the Chief Inspector and subject to such conditions as he may specify therein.

(3) A copy of every such notice and authorization, under sub-rule (2), shall forthwith be sent to the Chief Inspector and to the Inspector concerned by registered post.

17. Mine manager not to vacate office without notice.---No mine manager shall not vacate his office without giving due notice in writing to the owner or agent at least thirty days before the day on which he wishes to vacate his office:

Provided that the owner or agent may permit the mine manager to vacate his office after giving a short notice.

18. Transfer, discharge or dismissal of mine manager.---No owner or agent shall transfer, discharge or dismiss a mine manager unless the mine manager has been relieved by a duly qualified person.

19. Owner or agent to provide suitable residential accommodation.---The owner or agent shall provide suitable residential accommodation, within a suitable distance from all mine openings, to the mine manager and every manager, under manager, engineer, mine foreman, mine mate, mine sirdar, blaster or shot firer and they shall reside in the accommodation so provided:

Provided that where special difficulties exist which render compliance with the provisions of this rule not reasonably practicable, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, grant exemption from the same.

20. Owner or agent not to assign work to mine manager entailing his long absence from the mine.---No mine manager shall be entrusted by the owner or agent with any work, nor shall he himself perform any work, which shall necessitate his frequent or prolonged absence from the mine.

21. **Mine manager not to supervise any other mine.**---No mine manager shall act as agent or under manager or assistant manager or in any other supervisory capacity in another mine.

22. **Supervision of mine manager to be direct.**---(1) In every mine the supervision to be exercised by the mine manager shall be direct and personal.

(2) If any doubt arises as to any matter referred to in sub-rule (1), it shall be referred to the Chief Inspector for decision.

23. **Owner or agent not to take part in technical management.**---The owner or agent shall not take any part in the technical management of the mine unless he holds technical qualifications equivalent to or higher than those of a mine manager.

24. **Appointment of engineers.**---(1) At every mine where machinery is used, an engineer or other competent person not less than twenty three years of age shall be appointed to hold general charge of such machinery and to be responsible for its installation, maintenance and safe working:

Provided that nothing in this sub-rule shall be deemed to prohibit the employment of two or more engineers or competent persons at one mine so long as the jurisdiction and sphere of responsibility of every such engineer or competent person is defined by the mine manager in his letter of appointment:

Provided further that no person unless he holds a degree or diploma in mechanical or electrical engineering from a recognized Board or equivalent qualification shall, except with the previous permission in writing of the Chief Inspector and subject to such conditions, as he may specify therein, be appointed in an open surface mine worked by heavy earth-moving machinery.

(2) A notice of every such appointment under sub-rule (1), giving the name and full particulars of the qualifications and experience of the person so appointed, shall be sent to the Chief Inspector and the Inspector concerned within thirty days of such appointment.

(3) No person shall undertake the duties of an engineer of more than one mine without the previous permission in writing of the Chief Inspector and subject to such conditions, as he may specify therein. The Chief Inspector may at any time, by an order in writing, vary or revoke such permission.

25. **Power to authorize a person in the absence of engineer.**---(1) Where by reason of temporary absence by any cause, the engineer or competent person appointed under sub-rule (1) of rule 24 of these rules is unable to perform his duties, the mine manager shall authorize in writing a competent person to act in his place:

Provided that notice of every such authorization shall be sent to the Chief Inspector and the Inspector concerned forthwith.

(2) No authorization under sub-rule (1), shall have effect for a period in excess of thirty days except with the previous written consent of the Chief Inspector and subject to such conditions, as he may specify therein. The Chief Inspector may by an order in writing, revoke any authority so granted.

26. **Appointment of mine foreman.**---(1) At every mine, one or more foremen shall be appointed to hold charge of the different workings of the mine on each working shift. The mine workings assigned to a foreman shall not be of such a size, nor shall any additional duties other than his duties under these rules be such, as are likely to prevent him from carrying out in a thorough manner the duties prescribed for him under these rules.

(2) In case any doubt arises as to the foregoing duties of a foremen, it shall be referred to the Chief Inspector for decision.

(3) Every person employed under sub-rule (1) shall hold either a Manager's Certificate or a Foreman's Certificate.

27. **Appointment of surveyors.**---(1) At every mine having workings belowground and at such other mines or classes of mines, a person not less than twenty three years of age and holding a Surveyor's Certificate shall be appointed for carrying out the survey and leveling and for preparing the plans and Sections required under the Act or these rules or orders made thereunder:

Provided that nothing in this sub-rule shall be deemed to prohibit the employment of two or more surveyors at one mine so long as the jurisdiction and sphere of responsibility of each of the surveyors is defined by the mine manager in the letter of appointment.

(2) A notice of every such appointment made under sub-rule (1), giving the name and full particulars of the qualifications of the person so appointed, shall be sent to the Chief Inspector and the Inspector concerned within thirty days of such appointment.

(3) No person shall be appointed as a surveyor of more than one mines or in any other capacity in the same mine, without the previous permission in writing of the Chief Inspector and subject to such conditions, as may be specified therein.

(4) The Chief Inspector may, by an order in writing, revoke permission granted under sub-rule (3), if the circumstances, under which it was granted, have altered or the Chief Inspector finds that the surveyor has not been able to carry out satisfactorily the work assigned to him.

28. Appointment of officials and competent persons.---(1) The owner, agent or mine manager shall appoint such number of competent persons, including officials and technicians as is sufficient to secure, during each of the working shifts—

- (a) adequate inspection of the mine and the equipment thereof;
- (b) a thorough supervision of all operations in the mine;
- (c) the installation, running and maintenance, in safe working order, of all machinery in the mine; and
- (d) the enforcement of the requirements of the Act and these rules and orders made thereunder:

Provided that if the Chief Inspector or the Inspector concerned finds that the number of persons already appointed are inadequate, he may require the appointment of such number of additional competent persons by the owner, agent or mine manager as he considers necessary.

(2) It shall be the responsibility of the mine manager to see that the persons appointed under sub-rule (1) are competent to perform the duties assigned to them. No person shall be so appointed unless he is paid by the owner or agent and is answerable to the mine manager.

(3) Copies of all appointments made under sub-rule (1) shall be entered in a bound-paged book kept for the purpose. A list of all such competent persons shall also be maintained.

29. Qualification of person appointed for inspection.---No person shall be appointed under rule 28 of these rules to carry out the inspection of mines unless he has attained the age of twenty three years and has had sufficient practical experience of the working of mine. If any question arises whether the person so appointed is competent to carry out the duties required of him, the decision of the Chief Inspector shall be final.

30. Duties and responsibilities of mine manager.---(1) In every mine, daily inspection shall be conducted by the mine manager himself or through a competent person authorized in this behalf and in case of workings belowground, he shall visit and examine the workings belowground to see that safety in every respect is ensured. These inspections once at least in every fortnight shall be made during the nightshift:

Provided that in the case of a mine where an assistant manager or under manager holding a First Class Manager's Certificate is employed, shall visit and examine the workings belowground at least once in a day:

Provided further that when owing to any unavoidable cause, the mine manager is unable to carry out the aforesaid duties or inspections, he shall record the reason for the same in the book kept for the said purpose.

(2) The mine manager, shall maintain, in a bound-paged book kept for the purpose, a diary and shall record therein the result of each of his inspections and also the action, taken by him to rectify the defects mentioned, if any.

(3) The mine manager shall make arrangements for all competent persons and other officials to meet him or the person authorized by him in this regard, once in every working day for the purpose of conferring on matters connected with their duties.

(4) The mine manager shall see that a sufficient supply of proper materials and appliances for the purpose of carrying out the provisions of the Act, these rules or orders made thereunder and for ensuring the safety of the mine and the persons employed therein, is always provided at the mine; and if he be not the owner, agent or employer, he shall report in writing to the owner, agent or employer when anything is required for the aforesaid purpose, that is not within the scope of his authority to order. A copy of every such report shall be recorded in a bound-paged book kept for the purpose.

(5) On receipt of a requisition under sub-rule (4), the owner or agent shall take action immediately and also shall, within three days of receipt of the requisition, inform the mine manager in writing of the action taken.

(6) The mine manager shall-

- (a) assign to every competent person his particular duties;
- (b) on his appointment, make over to him a copy of the rules and of any orders made thereunder which affect him; and
- (c) take all possible steps to ensure that every such person understands, carries out and enforces the provisions therein contained in a proper manner.

(7) The mine manager shall provide every competent person with a plan, upto the date of the last survey, showing the workings of the mine belowground assigned to him. Where any work of reduction or extraction of pillars is being carried out, such plan shall show clearly the order in which such reduction or extraction is to be carried out. In case of extraction or reduction of pillar the mine manager shall inform the Chief Inspector and the concerned Inspector.

(8) The mine manager shall examine all reports, registers and other records required to be made or kept under the Act or of the rules or orders made thereunder, and shall countersign the same and date his signature. He may, however, by an order in writing, delegate this duty to any competent person except in cases where a specific provision is made requiring the mine manager to countersign a report or register.

(9) The mine manager shall give attention to, and cause to be carefully investigated any specific representation or complaint that may be made to him in writing by an employee of the mine as to any matter affecting the safety or health of persons in or about the mine.

(10) When any accident, resulting in serious bodily injury to any person or loss of life, occurs in a mine, the mine manager shall inspect the site of accident as soon as possible, and shall also conduct an inquiry into the cause of and circumstances attending the accident. The result of every such enquiry and a plan of the site of the accident showing details shall be recorded in a bound-paged book kept for the purpose.

(11) The mine manager shall perform such other duties as have been prescribed in that behalf under the Act and these rules.

(12) The mine manger may suspend or take such disciplinary action against any employee for contravention of any of the provisions of the Act, these rules or any order made thereunder.

(13) The mine manager shall ensure that the assistant manager, under manager, foreman, mine sirdar, shot firer, mine mate and competent persons are performing their duties as assigned to them under the Act and these rules.

31. Duties and responsibilities of assistant mangers or under manager.---

(1) The assistant manager or under manager, as the case may be, shall carry out the duties assigned to them by the mine manager and shall see that in the part of the mine assigned to them by the mine manager, all work is carried out in accordance with the provisions of the Act, these rules or any orders made thereunder.

(2) The assistant mangers or under manager, as the case may be, shall, subject to the orders of the mine manager, visit and examine the workings under his charge or part thereof, on every working day.

(3) The assistant manager or under manager, as the case may be, shall, from time to time, carefully examine every travelable part of the mine or part thereof placed under his charge, whether frequented by work persons or not.

(4) In the absence of the mine manager, the assistant managers or under manager, as the case may be, shall have the same responsibility, discharge the same duties and be subject to the same liabilities as the mine manager, but not so as to exempt the mine manager therefrom.

32. Duties and responsibilities of mine foreman.---(1) Subject to the orders of superior officials, the mine foreman shall perform such duties, as may be assigned to him by the mine manager.

(2) In the case of working belowground, the mine foreman shall, while on duty, carry a plan of the workings of such mine and shall keep the plan up-to-date.

(3) The mine foreman shall, in his mine, make the inspections and reports required by these rules.

(4) The mine foreman shall be responsible to see that the subordinate officials and competent persons in his mine carry out their respective duties in a proper manner.

(5) The mine foreman shall enforce in his mine the provisions of the Act, these rules and any orders made thereunder, and shall, subject to the control of the mine manager, the under manager or assistant manager, if any, give such directions as may be necessary, to ensure compliance with those provisions and to secure the safety of the mine and the safety and proper discipline of the persons employed therein.

(6) The mine foreman shall send out of the mine any person under his charge infringing or attempting to infringe any provision of the Act, these rules or any orders made thereunder or failing to carry out any direction given with regard to safety and shall report in writing any such infringement or attempted infringement or failure to the mine manager.

(7) The mine foreman shall ensure that sufficient supplies of timber, brattice and other necessities required for the safe working of his mine are kept in convenient places therein.

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(8) The mine foreman shall see that every air-crossing, stopping, door, brattice and other ventilation device is maintained in good order.

(9) The mine foreman shall, in his mine, ensure that the ventilation is effective and when brattices or air pipes are required to be used for the ventilation of the working places, he shall see that they are kept sufficiently advance to ensure that an adequate amount of air reaches every such working place.

(10) The mine foreman shall ensure that all tracks and tramlines are properly laid, graded, ballasted or otherwise packed.

(11) The mine foreman shall ensure that the manholes on the haulage roadways are kept safe, clear of any obstruction and properly white-washed.

(12) The mine foreman shall make sure that the stop-blocks and other safety devices are fixed and used as required under these rules, the drag or back-stays are provided and regularly used behind tubs ascending declines and that a sufficient supply of suitable safety appliance is provided where tubs are loaded on a gradient or lowered down a gradient by hand.

(13) The mine foreman shall, if he finds any of the ropes, chains, signals, brakes and post or other apparatus in use in his mine to be in an unsafe condition, stop the use of the same forthwith.

(14) The mine foreman shall be responsible to see that except for the purpose of inspection, examination and repairs every person other than an official or a haulage attendant travels by the travelling roadway.

(15) The mine foreman shall give prompt attention to the removal of any danger observed or reported to him and shall ensure that dangerous places are adequately fenced.

(16) The mine foreman shall visit each working place in his mine as often as may be necessary or possible.

(17) The mine foreman shall not, except for justifiable cause, leave the mine in his charge until he had finished the inspections required under these rules and any other duties that he is required to perform or until relieved by a duly appointed substitute.

(18) The mine foreman shall, if the mine is working in a continuous succession of shifts, confer with the official succeeding him and give him such information, as may be necessary, for the safety of his mine and of persons employed therein.

(19) The mine foreman shall, at the end of his shift, record in a bound-paged book kept for the purpose, a general report on the performance of all his duties during the shift, including anything concerning the proper working of the mine and the safety and discipline of persons employed in his mine.

33. Duties and responsibilities of mining mates.---(1) Subject to orders of superior officials, the mining mate shall have responsible charge or control of the mine assigned to him by the mine manager or the assistant manager, as the case may be.

(2) The mining mate shall take reasonable means to ensure the proper observance of the requirements of the Act, these rules and any orders made thereunder by persons under his charge and shall, as soon as practicable, report any contravention thereof to his superior officials.

(3) The mining mate shall make such inspection and reports as are required by these rules and in making such examination, he shall pay particular attention to edges of the worked out area (goaf), if any, for checking supports.

(4) Except in the case of a mine working in a continuous succession of shifts, mining mate shall, on completion of the first inspection of the district, proceed to the station appoint and instruct all persons as to their places of work and as to any special precautions necessary to be observed by them.

(5) If the mining mate finds any person in a place other than the one assigned to him, he may order such person to be out of the mine, and shall forthwith report the matter to his superior officials.

(6) The mining mate shall ensure that no inexperienced person is employed on any work except under the supervision of an experienced person.

(7) The mining mate shall see that all travelling roadways to, and working places in, his mine are made and kept secure.

(8) The mining mate shall report to his superior official any deficiency in timber, appliances and other necessities required for the safe working of the mine.

(9) Where either of the two ways affording means of egress from the mine to the surface is not ordinarily used for travelling, the mining mate shall travel, once at least in every three days, the whole of such way in order to make himself thoroughly acquainted with the same.

(10) If the mining mate observes any dangerous place during the course of his inspections or if any danger at a place where work persons are employed is reported to him, he shall, if the danger cannot be removed forthwith withdraw all persons from such place and shall not leave the place until the danger has been removed in his presence or all approaches to the place have been fenced off so as to prevent persons from inadvertently entering such place.

(11) The mining mate shall take care that any dangerous operation is carried out with due precaution and in such cases shall be present throughout whenever any work of clearing falls of ground and setting of supports therein is being carried out.

(12) The mining mate shall cause the entrance to every place which is not in actual use or in course of working or extension, to be fenced across the whole width, so as to prevent persons from inadvertently entering such place.

(13) If the mining mate finds any accumulation of gases, he shall not remove such accumulation until he has received instructions in that behalf from his superior official.

(14) The mining mate shall, on receipt of information of an accident to any person in his mine, proceed at once to the place of accident, inspect the place and, if required, supervise the rescue operations, and shall report or send notice of the accident to the mine manager or assistant manager, as the case may be.

(15) The mining mate shall devote the whole of his time to his duties and shall not leave the mine under his charge until the end of the shift or until relieved by a duly appointed substitute.

(16) If the mine is worked by a continuous succession of shifts, the mining mate shall, before leaving his mine, confer with the sirdar or competent person succeeding him, and shall acquaint him with all matters requiring his personal attention and give him such other information as may be necessary for the safety of his mine and of the persons employed therein.

34. Duties and responsibilities of mine sirdar.---(1) Subject to the orders of superior officials, the mine sirdar shall perform such duties, as may be assigned to him by the mine manager.

(2) The mine sirdar shall be responsible to see that the subordinate officials and competent persons in his mine carry out their respective duties in a proper manner.

(3) The mine sirdar shall, enforce in his mine the provisions of the Act, these rules or any orders made thereunder, and shall, subject to the direction of the mine manager, the under manager or assistant manager, if any, give such directions, as may be necessary, to ensure compliance with the provisions of the Act, these rules and orders made thereunder and to secure the safety of the mine and the safety of the persons employed therein.

(4) The mine sirdar shall have power to send out of the mine any person under his charge infringing or attempting to infringe any provision of the Act, these rules or any orders made thereunder, or failing to carry out any direction given with regard to safety and shall report in writing any such infringement or attempted infringement or failure to the mine manager.

(5) The mine sirdar shall ensure that sufficient supplies of timber, brattice and other necessities required for the safe working of the mine are kept in convenient places therein.

(6) The mine sirdar shall ensure that every air-crossing, stopping, door, brattice and other ventilation device is maintained in good order.

(7) The mine sirdar shall, in the mine, ensure that the ventilation is effective and when brattices or air pipes are required to be used for the ventilation of the working places, he shall see that they are kept sufficiently advance to ensure that an adequate amount of air reaches every such working place.

(8) The mine sirdar shall ensure that all tracks and tramlines are properly laid, graded, ballasted or otherwise packed.

(9) The mine sirdar shall ensure that the manholes on the haulage roadways are kept safe, clear of any obstruction and properly white-washed.

(10) The mine sirdar shall see ensure the stop-blocks and other safety devices are fixed and used as required under these rules, the drag or back-stays are provided and regularly used behind tubs ascending declines and that a sufficient supply of suitable safety appliance is provided where tubs are loaded on a gradient or lowered down a gradient by hand.

(11) The mine sirdar shall, if he finds any of the ropes, chains, signals, brakes, and post or other apparatus in use in his mine to be in an unsafe condition, stop the use of the same forthwith.

(12) The mine sirdar shall be responsible to make sure that except for the purpose of inspection, examination and repairs every person other than an official or a haulage attendant travels by the travelling roadway.

(13) The mine sirdar shall give prompt attention to the removal of any danger observed or reported to him, and shall see that dangerous places are adequately fenced.

(14) The mine sirdar shall devote the whole of his time to his duties and shall visit each working place in his mine as often as may be necessary or possible.

(15) The mine sirdar shall not, except for justifiable cause, leave the mine in his charge until he had finished the inspections required under these rules and any other duties that he is required to perform or until relieved by a duly appointed substitute.

(16) The mine sirdar shall, if the mine is working in a continuous succession of shifts, confer with the official succeeding him and give him such information, as may be necessary, for the safety of his mine and of persons employed therein.

(17) The mine sirdar shall, at the end of his shift, record in a bound-paged book kept for the purpose a general report on the performance of all his duties during the shift, including anything concerning the proper working of the mine and the safety and discipline of persons employed in his mine.

35. Duties and responsibilities of shot firer or blaster.---Every shot firer or blaster shall-

- (a) carry out all kind of blasting by himself or through a competent person of not less than twenty one years of age duly authorized in writing;
- (b) carry out his duties in accordance with the provisions of these rules and of any orders made thereunder with respect to the transport and use of explosives;
- (c) be responsible for the observance by his assistants, if any, of such provisions and of any direction with a view to safety which may be given to them by a superior official;
- (d) not hand over any explosives to any unauthorized person;
- (e) see that clay, sand or other suitable stemming material is available in sufficient quantities at convenient places;
- (f) be present when shots are being charged and stemmed and shall himself fire the shots; and
- (g) be responsible, when a shot has misfired, for seeing that the place is adequately fenced.

36. Duties of timber man.---(1) Every timber man shall carry out timbering and erections of supports in mines strictly in accordance with the orders of mine manager, assistant manager, under manager, foreman, mine sirdar or other competent person with respect to securing of hanging wall, footwall and roof, sides and other places where supports are required.

(2) The timber man shall at once report to the competent person of any shortage of timber in his mine.

(3) The timber man shall also be responsible to see that wood cuttings are not left in any working belowground.

37. **Duties of attendants of main mechanical ventilators (fans).---**Every person in charge of the main mechanical ventilator shall—

- (a) keep the ventilator (fan) running at the speed fixed by the mine manager;
- (b) examine the machinery and observe the pressure recorded or water gauge and the speed-indicator at intervals of not more than one hour, and shall, enter the readings of the indicator in a bound-paged book kept for the purpose at the fan-house;
- (c) immediately report to his superior official any stoppage of, damage to, or defect or derangement in the machinery, or any unusual variation in the water-gauge or other indicators;
- (d) immediately report also to his superior official any unusual circumstances in regard to mine ventilation which may come to his notice; and
- (e) where the ventilator is continuously operated, shall not leave his post until received by a duly appointed substitute.

38. **Duties and responsibilities of surveyors.---**(1) The surveyor shall make such accurate surveys and leveling and prepare such plans and Sections and tracings thereof, as the mine manager may direct or as may be required by the Act, these rules or any orders made thereunder and shall sign the plans, Sections and tracings and date his signature.

(2) The surveyor shall be responsible for the accuracy of any plan and Section or tracings thereof that has been prepared and signed by him.

(3) The surveyor shall record in a bound-paged book kept for the purpose, the full facts of underground mine workings or any other matter relating to the preparation of the plans and Sections that he may like to bring to the notice of the mine manager.

(4) Every entry in the book under sub-rule (3), shall be signed and dated by the surveyor and countersigned and dated by the mine manager:

Provided that where in any mine two or more surveyors are employed, each of the surveyors shall make the entries aforesaid in respect of the workings in his jurisdiction or of the plans and Sections in his charge.

(5) Nothing in sub-rules (1), (2), (3) and (4) shall absolve the owner, agent or mine manager of his responsibility under the Act, these rules or any orders made thereunder.

39. Duties and responsibilities of engineers.---(1) The engineers shall, subject to the orders of the superior officials, hold general charge of all machinery at the mine and shall be responsible for the proper installation, maintenance and safe working of such machinery.

(2) The engineers shall, when any machinery is shifted or newly installed, see that it is given a trial run before it is put into use and shall be present during every such trial run.

(3) The engineers shall be present throughout whenever any work of installing, changing or recapping of any winding rope or of installing, changing or any other work concerned with machinery is being carried on.

(4) The engineers shall make sure that the provisions of the Act, these rules and orders made thereunder relating to the installation, maintenance, operation or examination of machinery are properly carried out by himself or by subordinate officials, competent persons or work persons, as the case may be, appointed for the purpose.

(5) If mechanics, electricians or other subordinate officials or competent persons are appointed for the purpose, the engineers shall examine all reports, registers and other records relating to the installation, maintenance, operation or examination of machinery required to be made or kept under the Act, these rules or orders made thereunder, and shall countersign the same and date his signature.

40. Duties of the signalmen.---(1) The signalman shall, subject to the orders of a superior official, have full control of the top or bottom of shaft and incline, as the case may be, and shall report to such official any person who, without authority, gives a signal or disobeys instructions.

(2) The signalman shall thoroughly acquaint himself with and carefully attend to the code of signals as provided in rule 50 of these rules and shall properly transmit the signals by the means provided.

(3) The signalman shall not act on any signal, the correctness of which he is in doubt, except a signal which he believes to be "to stop". He shall not allow any unauthorized person to give signals.

(4) The signalman shall immediately report to his superior official any defect in the signaling installation and shall devote the whole of his time to his duties, and shall not leave his place during the period of his duty.

(5) Where persons are raised or lowered in the shaft or incline, the signalman shall not leave his place at the end of his shift unless all the persons have come out of the shaft or unless relieved by a duly appointed substitute.

(6) The signalman shall not allow more than the authorized number of persons to enter the cage or other means of conveyance at any one time.

(7) The signalman shall not, unless specially authorized in writing by the mine manager in that behalf, allow any persons when riding in a cage or other means of conveyance, to take with him any bulky material other than tools and instruments.

Provided that nothing in this sub-rule shall be deemed to prohibit the carrying, in a cage or other means of conveyance, the explosives by a shot firer or blaster or other competent person.

(7) After any stoppage of winding for repairs or for any other cause for a period exceeding two hours, the signalman shall not allow any person to ride in the cage or other means of conveyance unless it has been run at least one complete trip up and down the working portion of the shaft or incline.

(8) The signalman shall not allow any person to ride on the top or edge of any cage or other means of conveyance except when engaged in examination, repair or any other work in the shaft.

(9) The signalman shall, after persons have entered the cage, ensure that the cage gates on both sides are in position and closed, before signaling for the cage to be lowered or raised.

(10) The signalman shall not allow any unauthorized person to handle tubs in or out of the cage. While tubs are being lowered or raised, he shall also see that the catches are holding the tubs properly before signaling the cage or other means of conveyance away. If he notices any defect in the tub-catches, he shall immediately inform his superior official.

(11) The signalman shall not, at any entrance into a shaft or inset which is provided with gates or fences not worked by the cage or other means of conveyance, begin to remove the gate or fence until the cage or other means of conveyance has stopped at the entrance and shall close the gate before he has signaled the cage or other means of conveyance away. He shall not permit any unauthorized person to open or interfere with the gate.

(12) The signalman shall make sure that all fences and gates provided at the top of the shaft or incline or at any inset are in position and shall not permit any unauthorized person to remove a fence or gate and if he notices any defect in such fence or gate, he shall immediately inform his superior official.

(13) The signalman shall keep the top of the shaft or incline or the inset and the floor of every cage free from loose materials and when long timber, pipes, rails or other material projecting over the top of a cage or other means of conveyance are lowered or raised, make sure that the projecting ends are securely fastened to the rope or chains.

(14) The signalman shall, when he suspects that the cages are not working smoothly in the shaft or incline or when he hears anything unusual happening in the shaft while the winding engine is working, immediately give signal to the winding engineman to stop the engine.

(15) Where the mine manager so directs by an order in writing, the bellman shall also carry out the duties of a signalman.

41. Duties of haulage driver.---(1) At the beginning of his shift, the haulage driver shall examine the engine, its brakes and all appliances in his charge and shall satisfy himself that they are in good working order.

(2) The haulage driver shall, during his shift, keep the haulage engine and apparatus connected therewith properly cleaned and oiled and the engine-room clean and free of inflammable material.

(3) The haulage driver shall report immediately to the mine manager, engineer or other competent person, as the case may be, appointed for the purpose any defect which he has noticed in the engine, drum, rope or other appliances under his charge.

(4) Whenever the haulage driver has occasion to leave the engine, he shall cut off the power and secure the engine with the brakes.

(5) The haulage driver shall not allow any unauthorized person to enter the engine- room or in any way to interfere with the engine or signal, as the case maybe.

(6) Every haulage driver shall thoroughly acquaint himself with and carefully attend to, the code of signals provided in rule 50 of these rules. The haulage engineman shall not start the engine until he has received the proper signal to do so. If the signal is indistinct, he shall not start the engine until it has been repeated and he clearly understands it.

(7) The person in charge at the top of any haulage plane or incline shall see that the stop-block are blocking the way, before allowing any tub to be brought on to the top landing and shall cause the tubs to be securely coupled up to each other and to the rope or chain, before the stop block is opened. In case any alternative safety appliance is provided, he shall cause the same to be brought into use on every such occasion.

(8) The person who is responsible for the attachment to the haulage rope, of any tub or set of tubs at any stopping place on any haulage plane or incline, shall see that no person remains in a position of danger at or near such stopping place while the rope is in motion.

(9) The person in charge of any tubs or set of tubs, which it is intended to send up any haulage plane or incline on which drags or back-stays are required to be used, shall securely fix the drag or back-stay or cause it to be so fixed, before such tub or set of tubs is set in motion.

(10) The person in charge at the top or bottom of the incline shall see that no unauthorized person rides on any tub or haulage rope.

(11) Before a train of side-tipping tubs is set in motion, the person in charge shall see that the safety catches of all such tubs are properly secured.

42. **Duties of locomotive driver.**---(1) The locomotive driver shall, before commencing work in his shifts, ensure that the audible signal and the brakes of the locomotive are in proper working order.

(2) The locomotive driver shall not work on locomotive except during hours of daylight, unless the locomotive is fitted with sufficient headlights.

(3) The locomotive driver shall immediately report to the mine manager, engineer or other competent person appointed for the purpose any defect which he has noticed in the locomotive or any part or fitting thereof.

(4) The locomotive driver shall not set the locomotive in motion until audible warning has been given by him to persons whose safety may be endangered. He shall also give the audible warning when the locomotive is approaching a level crossing or any place where any person is at work or where the driver's sight is intercepted.

(5) The locomotive driver shall not leave a locomotive unattended away from the places where it is housed, unless he has ensured that it cannot be set in motion by any unauthorized person.

(6) The locomotive driver shall ensure that no unauthorized person drives, handles or raises on locomotive.

(7) When tubs are being pushed in front of the locomotive, the shunter shall accompany the leading tub.

43. **Duties of magazine in charge.**---(1) Every magazine incharge shall--

- (a) subject to the orders of superior officials, be responsible for the proper receipt, storage and issue of explosives in and from the magazine;
- (b) maintain such records of explosives so received, stored and issued, as are required by the respective rules made under the Khyber Pakhtunkhwa Explosives Act, 2013 (Khyber Pakhtunkhwa Act No. XXV of 2013), under these rules and any orders made thereunder;

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- (c) not issue explosives to any person other than a competent persons and when explosives are returned to the magazine, shall re-issue such explosives before issuing fresh stock;
 - (d) record in abound-paged book kept for the purpose, the names of various competent persons and the quantity and nature of explosives issued to each of them and shall similarly record the quantity and nature of explosives returned to the magazine by each such person;
 - (e) securely lock each canister before issuing it to the competent persons and shall also check whether the canister is returned to the magazine in locked condition;
 - (f) not issue explosives in any canister which is not in proper repair or which cannot be securely locked;
 - (g) not allow any unauthorized person to enter the magazine; and
 - (h) if he discovers any shortage of explosives in the magazine, forthwith inform the mine manager in writing.

(2) Proper instruction in writing regarding, handling, storage and use of explosives shall be displayed at explosives magazines or any other conspicuous places.

44. Duties of register keepers and attendance clerks, etc.---(1) Every person appointed to keep registers or other records required by or under the Act, these rules and any order made thereunder or to make entries therein, shall make the necessary entries if required.

(2) During the whole time that persons are at work, the attendance clerk shall remain on duty at the mine office which shall be provided near the workplaces, or in case of workings belowground, near the outlet used by the work persons to enter and leave such workings.

(3) No person who is not an employee of the mine or is not entitled to enter the mine or is not so authorized by the mine manager, shall enter the mine.

(4) It shall be the duty of the attendance clerk to see that no such person enters the mine. If any such person forcibly enters the mine, the attendance clerk shall immediately report the matter in writing to the mine manager.

(5) If after the commencement of a shift, any official or a competent person has not got his attendance recorded in the register maintained under these rules, the attendance clerk concerned shall, within two hours after the commencement of the shift, report the fact in writing to the mine manager or the under manager or other official in charge of the shift.

CHAPTER-IV
**MEANS OF INGRESS AND EGRESS IN A MINE SHAFTS
AND OUTLETS**

45. **Outlets from a mine.**---(1) No person shall be employed or be permitted to enter or remain for purposes of employment, in any working belowground, unless the mine is provided with at least two shafts or two outlets to the surface with which every lode, reef, vein or mineral bed or deposit thereof, for the time being at work has a communication so as to afford separate means of ingress and egress to the persons employed therein.

(2) Suitable arrangements shall be made for persons to descend and ascend from the mine at each of such shafts or outlets. Where the shaft is vertical such arrangements shall be by means of a proper winding engine. Every such winding engine shall be installed and maintained as to be constantly available for use.

(3) If any doubt arises as to whether any such arrangement under sub-rule (2), is suitable or not, it shall be referred to the Chief Inspector for decision:

Provided that, if required by the Inspector concerned by an order in writing, a proper winding engine shall be provided in a shaft more than sixty (60) meters in depth even if it is not vertical.

(4) Such shafts, inclines or outlets shall not be less than twenty (20) meters distant from one another at any point and each shall be connected with the other by means of a walkable passage, not less than 1.8 meters high and 1.5 meters wide, through the workings belowground that are being served by such shafts or outlets:

Provided that outlets made before the coming into force of these rules may be closer than fifteen (15) meters but not less than six (6) meters apart.

(5) Whenever the connection between two outlets which are required to be maintained under sub-rule (1) has been obstructed or found dangerous, only such persons as are necessary to clear the obstruction or to repair the dangerous part of the connection or to make a new second outlet, as the case may be, shall be employed belowground until such time as the connection has been re-established or a new second outlet has been provided.

(6) The foregoing provisions of these rules with respect to shafts and outlets shall not apply-

- (a) to a shaft which is being sunk or to an incline or outlet which is being made;
- (b) to any working for the purpose of making a connection between two or more shafts or outlets; and
- (c) to any working for the sole purpose of searching for or proving minerals so long as not more than twenty persons are employed belowground at any one time in the whole of the different veins in connection with a single shaft or outlet:

Provided that if the single outlet is an un-walkable shaft other than a shaft in the course of being sunk, and exceed thirty(30) meters in depth, it shall be provided both with ladders and with other means of raising and lowering persons:

Provided further that nothing in this sub-rule shall be deemed to authorize the driving of roadways for the development purposes before a second outlet has been made in accordance with this rule.

(7) At a mine having single shaft or outlet not more than twenty persons shall be employed underground at any one mine.

(8) The Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, exempt from the operation of this rule any mine in the case of which special difficulties exist which in his opinion make compliance with the provisions thereof not reasonably practicable.

(9) Every shaft and every winze or raise intended to be used for purposes of winding or haulage in the course of being sunk shall be provided with a permanent lining of metal, concrete or masonry, which shall at no time be more than six (6) meters from the bottom of the shaft:

Provided that where iron or steel rings with a substantial lagging are used below the permanent lagging and are kept close to the bottom of the shaft, this distance may be increased to not more than twenty (20) meters. If any doubt arises as to whether the strata are stable or not, it shall be referred to the Chief Inspector for decision.

(10) Every shaft, winze or raise regularly used for lowering and raising persons or materials, in which water seeps out of the strata, shall be provided with suitable means of collecting and conducting away seepage water.

(11) The top, all insets and bottom of every working shaft and the sump thereof shall be kept clear and free from loose materials, tools and debris.

46. Fencings and gates at outlets.---(1) Every entrance to a mine from the surface, and the top and all entrances between the top and bottom, including the sump, if any, of every working, ventilating or pumping shaft, shall be kept securely fenced.

(2) Every walkable entrance from the surface to the workings belowground shall be provided with substantial gate which shall be kept closed and locked when there are no persons below ground:

Provided that where such entrance is not used as a means of ingress or egress in or out of the mine, it shall be permanently closed so as effectively to prevent persons from entering therein.

47. Periodic examination of outlets.---(1) Every shaft, incline and other outlets provided shall be examined, once at least every seven days, by the mine manager, assistant manager, under manager, mine foreman and mine sirdar or other competent person authorized in writing.

968 (2) A report of every such examination under sub-rule (1), shall immediately thereafter be recorded in a bound-book kept for the purpose and shall be signed and dated by the person making the examination.

(3) If at the time of examination under sub-rule (1) or at any other time, the shaft or other outlet is found to be not safe, it shall not be used for any purpose, except as a natural airway, until it has been made safe in all respects.

(4) Report of every such action taken under sub-rule (3) shall be recorded in the book kept under sub-rule (2).

CHAPTER-V

TRANSPORT OF MEN AND MATERIALS-HAULAGE

48. Haulage roadways.—The following provisions shall have effect with respect to every length of road or roadway in a mine where materials are transported in tubs by means of gravity or mechanical power, namely:

- (a) every such roadway shall be of adequate dimensions but not less than six (6) feet in height and six (6) feet in width and, as far as practicable, shall be straight and of regular gradient not more than forty (40) degree and have tracks properly laid with rails of adequate Section;
- (b) pulleys, sheaves and rollers that alter the direction of a rope shall be securely fixed. No person shall guide or adjust a moving rope on to a drum, pulley, sheave or roller except with a lever or other proper appliance;
- (c) where haulage is effected by one or more ropes, there shall be provided and maintained at the top of every inclined plane, at least one stop-block or other effective mechanism to arrest tubs from running or moving out of control;
- (d) an attachment, behind an ascending tub or set of tubs, or a back-stay, drag or other suitable contrivance shall be provided for preventing the tub or set of tubs running back;

- (e) where an endless rope or chain is used, a suitable automatic catches or other effective appliance are provided at suitable intervals along the track to prevent the ascending tubs running back:

Provided that the Chief Inspector or the Inspector concerned may, by an order in writing and subject to such conditions as he may specify therein, grant exemption from the operation of this sub-rule on grounds that compliance with the provisions thereof is not reasonably practicable;

- (f) safety hooks or other suitable system be provided to prevent runaway in the forward direction and tub retailer at intervals of not more than two hundred and fifty (250) meters; and
(g) on every haulage roadway exceeding thirty (30) meters in length, effective means of transmitting signal shall be maintained from every stopping place on the roadway to the place at which the machinery working the rope is operated. All signals shall be transmitted by mechanical or electrical means:

Provided that the Inspector concerned may, by an order in writing, require means of transmitting signals in the reverse direction also. If any doubt arises as to whether any means of transmitting signal is effective or not, it shall be referred to the Chief Inspector for decision.

49. Code of signals and telephonic communication.---(1) The following code of signals shall be used and strictly observed, namely:

One rape	STOP when in motion.
Two rapes	START when at rest.
Three rapes	LOWER or haul in slowly.
Four rapes	RAISE or haul out slowly.

(2) Any other signals shall be in addition to, and shall not interfere with, the signals provided in sub-rule (1):

Provided that the Chief Inspector may, by an order in writing and subject to such conditions, as he may specify therein, permit the use of any code of signals other than that specified in sub-rule (1).

(3) A printed copy of the code of signals as provided in sub-rule (1), including additional signals, if any, shall be posted prominently at the place in which the machinery that works the rope is operated and at all regular stopping places along the roadway.

(4) No person, other than a competent person or an official, shall give any signal.

(5) Where in any mine belowground, a system of haulage roadway and conveyors, if any, extend to a distance of more than six hundred (600) meters from the shaft or the entrance to the mine, efficient telephonic communication shall be provided and maintained between the end of every such system and the bottom and top of the shaft or the entrance to the mine, as the case may be:

Provided that where travelling is unduly arduous, the Chief Inspector may, by an order in writing require the provision and maintenance of telephonic communication in any other case also.

(6) Where telephones or electrical signals are provided-

- (a) adequate precautions shall be taken to prevent signal and telephone wires coming into contact with other cables and electrical apparatus;
- (b) signal wires shall be supported on insulators, and shall not be energized at more than 30 volts;
- (c) contact makers shall be so constructed as to prevent accidental closing of the circuit; and
- (d) all signaling or telephonic communication circuit shall be constructed, installed, protected, operated and maintained in such a manner as intrinsically safe.

(7) At places where telephone receivers are installed or where signals and safety appliances are regularly operated, every person using the telephone or operating any such signal or safety appliance shall be afforded adequate protection against tubs moving out of control.

50. Manholes.---(1) Where any person is allotted to work or pass while the haulage is in motion, manholes for refuge shall be provided at intervals of not more than fifteen (15) meters:

Provided that where the gradient is less than 1 in 6, such manholes may be provided at intervals of not more than twenty (20) meters.

(2) Manholes shall not be less than 1.8 meters in height and 1.2 meters in depth, and not less than 0.8 meters but not more than one meter in width:

Provided that the Chief Inspector may, by an order in writing and subject to such condition as he may specify therein, permit the use as manholes or cross-roadways other than haulage roadways, of dimensions larger than those mentioned in this rule.

(3) Every manhole shall be kept clean and clear of obstruction and white washed both inside and for a distance of not less than 0.3 meters around the aperture.

(4) As far as practicable, all manholes shall be provided on one side of the haulage roadway.

(5) In case where there are serious practical difficulties in providing manholes as specified in sub-rules (1) and (2), the Inspector concerned may, by an order in writing and subject to such conditions as he may specify therein, permit manholes to be at greater intervals or of other dimensions.

(6) Except where haulage is operated by means of an endless rope or chain, whenever the haulage rope is in motion, every person on the haulage roadway shall take shelter in a manhole.

51. Tubs and their movements.---(1) The mine manager shall, by an order in writing, in respect of every haulage road or roadway, fix the maximum number of tubs, according as to whether they are loaded or not loaded, that may be coupled together to run as a set or train.

(2) A notice specifying the number of tubs so fixed under sub-rule (1), shall be posted prominently at the top and at all regular stopping places of the haulage road or roadway.

(3) At all places where tubs are coupled or uncoupled, there shall be a clear space of not less than one meter—

(a) between the tubs and one side of the roadway; and

(b) where there are two or more tracks also between the adjacent tracks.

(4) When any roadway or face is in direct line with a haulage track and persons may be exposed to danger from runaway tubs, a strong buffer or other effective appliances to prevent such danger shall be provided and maintained.

(5) A stop block or other effective contrivance shall be provided near the entrance of every tramming roadway branching off the main haulage road or roadway and on every track which slopes towards a shaft.

(6) On every tub there shall be provided and maintained at each coupling end a strong buffer projecting beyond the end and so arranged that when two such tubs are in tandem, the gap between the innermost ends shall not be less than twenty (20) centimeters.

(7) On every side-tipping tub in use, safety-catches shall be provided to prevent accidental tipping. No tub or set or train of tubs shall be set in motion unless all the safety catches are properly secured.

(8) The attachment between a rope or locomotive and a tub or set of tubs, and the attachment between any two tubs in a set shall be of a type approved in writing by the Chief Inspector by a general or special order and so maintained as to obviate accidental disconnection.

(9) The state of every buffer and drawbar of every tub in use and of every safety- catch, coupling-chain and other attachment shall be examined once at least in every seven days, by a competent person appointed for the purpose.

(10) A report of every examination made under sub-rule (8), shall be recorded in a bound-paged book kept for the purpose, and shall be signed and dated by the person who made the examination.

(11) When tubs are about to be moved, persons likely to be endangered shall be warned.

(12) Two or more tubs shall not be moved by hand in close succession but shall be coupled and moved together. Two tubs shall be deemed to be in close succession when the distance between them at any time is less than ten (10) meters.

(13) No person shall cause or permit a tub to run uncontrolled except with the written permission of the mine manager:

Provided that the Inspector concerned may, by an order in writing, prohibit the uncontrolled movement of tubs at any place if he is of the opinion that such movement is likely to cause danger.

(14) No person while taking a tub down a gradient exceeding 1 in 20, shall go in front of the tub and in every case where conditions are such that a person cannot control the tub from behind, he shall not take the tub down unless sprags or other suitable contrivances are used to control it.

(15) Where required for use, a sufficient number of sprags of suitable material and dimensions shall be provided.

(16) Every tub while standing on a track having a gradient of more than 1 in 20, shall unless held effectively by brakes or securely coupled to a haulage rope or locomotive, be effectively blocked, chained or otherwise secured.

(17) Except where haulage is operated by means of an endless rope, the coupling and uncoupling to tubs shall, as far as practicable, be done only when the tub or set of the tubs and the ropes if connected to the set, is not in motion.

(18) As far as practicable, tubs shall not be coupled or uncoupled on a gradient.

(19) Whenever it comes to the attention of a haulage driver that a tub being hauled by a rope, chain, locomotive or other mechanical means has got derailed, he shall immediately cause the haulage to be stopped. The tub shall then be re-railled or detached from the rope etc., before the haulage is started again.

(20) No person shall ride on any tub or haulage rope except with the written authority of the mine manager. A list of all persons, so authorized, shall be maintained.

52. Travelling roadways.---(1) Except when an exemption in writing has been granted by the Chief Inspector and subject to such conditions as he may specify therein, travelling roadways, separate from haulage roadways on which haulage is effected by mechanical means or gravity, shall be provided for persons to travel to and from their working places.

(2) Every such travelling roadway shall—

- (a) be not less than 1.8 meters high throughout; and
- (b) where the inclination exceeds thirty (30) degrees from the horizontal, be provided with suitable steps or ladders.

(3) Where the inclination exceeds forty five (45) degrees from the horizontal, the traveling roadway shall be provided, in addition to steps or ladders, with hand rails or ropes so as to ensure safe travel.

(4) Where the inclination exceeds sixty (60) degrees from the horizontal, the travelling roadway shall be provided, in addition to the steps or ladders and hand rails or ropes, with suitable platforms at intervals not exceeding ten (10) meters measured along the slope.

(5) Except for purposes of inspection, examination or repair, every person other than an official of haulage attendant, shall travel by the travelling roadway or compartment.

(6) Where persons using a travelling roadway or compartment have to cross a conveyor or a haulage worked by mechanical means or gravity, a suitable cross-over or cross-under bridge or other suitable device approved in writing by the Chief Inspector shall be provided.

(7) No haulage shall be used for the general conveyance of persons except with the permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

53. Protection at loading chutes.---Every chute where tubs are loaded shall be provided with suitable gates for holding back the column of material.

54. Haulage engines and ropes.---(1) Every haulage engine shall be provided with an effective brake.

(2) No rope shall be used for the purposes of haulage if it has any serious visible defect over any length.

(3) Every rope which is capped shall be recapped once at least every six months, and if necessary, at short intervals, under the supervision of a competent person.

(4) For every haulage rope in use, a record of size, construction, quality, name of supplier and dates of installation and of recapping, shall be kept in a bound-paged book kept for the purpose, and all entries therein shall be made by the competent person who shall sign the same and date his signature.

55. Roadway conveyor.---(1) Every roadway conveyor shall be so installed that—

- (a) between the conveyor and one side of the roadway, there is a travelling space free from obstruction not less than one meter wide;
- (b) the conveyor or any part thereof does not scrape against wooden props or supports; and
- (c) the anchoring of the return station of the conveyor is independent of the face or roadway support.

(2) Where the inclination of the conveyor is such as to give rise to danger from sliding objects or material, suitable devices shall be used to provide adequate protection against such danger.

(3) On every length of roadway in which a conveyor is installed for transporting loads over a distance exceeding thirty (30) meters, there shall be provided and maintained effective means of transmitting signals from every point on the length of the road to the place at which the machinery working the conveyor is operated:

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Provided that the Inspector concerned may, by an order in writing, require means of transmitting signals in the reserve direction also.

(4) No belt conveyor shall be used in a mine belowground without the permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

56. Examination of haulage engines and track etc.---(1) It shall be the duty of a competent person to examine carefully--

- (a) once at least every twenty four hours, every haulage engine, brake-wheel, rope and other appliance in use; and
- (b) once at least every seven days, every track where the haulage is operated by means of mechanical power of gravity and every safety appliance fitted thereon.

(2) A report of every such examination shall be recorded in a bound-paged book kept for the purpose, and shall be signed and dated by the person who made the examination.

57. Examination of haulage and travelling roadways.---(1) It shall be the duty of the mine manager, assistant manager, under manager, mine foreman and mine sirdar or other competent person authorized in this behalf by the mine manager to examine carefully, once at least in every seven days, the state of all haulage and travelling roads and roadways, including roadways leading to all the outlets of the mine which are in use.

(2) A report of every examination made under sub-rule (1), shall be recorded in a bound-paged book kept for the purpose and shall be signed and dated by the person who made the examination.

58. Locomotives.---(1) No locomotive shall be used belowground otherwise than in accordance with the permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

(2) No locomotive shall be used where the gradient of the track exceeds 1 in 15.

(3) No person other than the driver shall ride on any locomotive unless authorized in writing to do so by the mine manager.

(4) Except during shunting operations, the locomotive shall lead the tubs or set or sets of tubs.

CHAPTER-VI WINDING IN SHAFTS

59. Appointment of winding enginemen and their duties.---(1) No person shall be appointed as a winding engineman unless he holds in the case of an electric winding engine or diesel winding engine or compressed air winding engine, an Engine Driver's Certificate.

(2) No person, other than a winding engineman appointed under sub-rule (1) or a duly appointed assistant working under his direct personal supervision, shall operate any winding engine; provided that in an emergency any other concerned competent person may be permitted to operate the engine.

(3) Where special difficulties exist which made compliance with the provision of sub-rule (2) not reasonably practicable, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, relax the said provisions.

(4) The name of the winding engineman on duty, together with the period of his shift, shall be posted in the winding engine room.

(5) Where the Inspector concerned is of the opinion that the duties of any winding engineman are unduly arduous, he may by an order in writing require the period of his shift to be reduced to such period, not less than five hours, as he may specify.

60. New winding installations.---(1) When it is intended to bring into use any new winding installation for lowering and raising persons, the owner, agent and mine manager, as the case may be, shall, not less than thirty (30) days before such use, give notice of such intention to the Chief Inspector and the Inspector. The notice shall contain detailed specifications of the installation.

(2) If the Chief Inspector, by an order in writing so require, such additions or alterations shall be made to the installation, as he may specify in the order.

61. **Construction and installation of winding equipment.**---(1) Every part of a winding installation, including headgear shall be of sound construction and adequate strength and shall be maintained in safe working order.

(2) The engine shall be firmly connected to a rigid foundation and shall be so designed, constructed and maintained that with the power provided, the raising and lowering of persons or materials can be carried out with ease, regularity and safety.

(3) Unless otherwise permitted in writing by the Chief Inspector and subject to such conditions, as he may specify therein, every engine for winding shall be so situated in relation to the headgear that the winding rope shall not, in the extreme position, subtend in either direction an angle more than one and a half degrees with the plane of the sheave or pulley used in connection with the rope.

(4) The diameter of the drums or sheaves of the winding engine and of the pulleys and sheaves used in connection with the winding shall, unless otherwise permitted in writing by the Chief Inspector and subject to such conditions as he may specify therein, be not less than eighty times the diameter of the rope in the case of winding installations:

Provided that the Chief Inspector may, by an order in writing, require that in the case of any specified winding installation installed before the date aforesaid, the diameter of the said drums, pulley or sheaves shall not be less than such size, up to hundred (100) times the diameter of the rope, as he may specify in the order.

(5) The grooves of such sheaves or pulleys shall be suited to the diameter of such rope. Every pulleys or sheaves used in connection with winding shall, while in motion, rotate in a vertical plane and shall be maintained in such a condition that slipping is reduced to a minimum.

62. Spare rope to be kept in store.---At every mine where a shaft is used for lowering or raising persons, at least one spare winding rope suitable for use in such shaft shall be kept in reserve.

63. Fittings of winding engines.---(1) At every shaft, including a shaft in the course of being sunk, where winding is operated by means of an engine, the following provisions regarding winding engines shall have effect, namely:

- (a) there shall be on the drum such flanges to prevent the rope from slipping or coiling unevenly. There shall be at least two turns of the rope on the drum when the cage or other means of conveyance is at its lowest working point in the shaft;
- (b) there shall be provided one or more brakes on the drum which will hold such cages or other means of conveyance when the maximum torque is applied;
- (c) if there are two brakes, at least one of the brakes shall be so designed that the brake remains at the 'on' position except when operated;
- (d) where the brake or brakes are power-operated, at least one of them shall be arranged to be applied automatically at all times if the power supply fails. In no case shall a brake be operated by an auxiliary electric current; and
- (e) the brake on the drum shall be used only for the purpose of keeping such drum stationary and not for lowering the cage or other means of conveyance, except in cases where the engine is to be worked at a very low speed as when examining the winding rope or the shaft.

(2) Every engine shall be equipped with a reliable depth-indicator showing to the winding engineman the position of the cage or other means of conveyance in the shaft and an automatic device that will ring a bell in the engine room when the ascending cage or other means of conveyance is at a distance of not less than two revolutions of the drum from the top of the shaft.

(3) The depth-indicator shall be tested after every adjustment or replacement of the winding rope.

64. **Shaft fittings.**---(1) At every winding shaft, other than a shaft in the course of being sunk—

(a) there shall also be provided and maintained efficient means for transmitting such signals from the top of the shaft to the winding engineman. All signals shall be transmitted by mechanical or electrical means;

(b) in signaling, the following code of signals shall be used and strictly observed:

One rap	STOP when in motion
Two raps	LOWER
Three raps	RAISE
Four raps	MEN ready to ascend or descend
Five raps	In reply, men may enter the cage or other means of conveyance;

(c) any other signals under these rules shall be in addition to, and shall not interfere with, the foregoing signals:

Provided that the Chief Inspector may, by an order in writing and subject to such conditions, as he may specify therein, permit the use of any code of signaling other than that specified in clause (b); and

(d) a printed copy of the code of signals, including additional signals, if any, shall be posted prominently at the top of the shaft and at every such inset and landing and also in the winding engine room. No person other than the bellman or signalman shall give any signal unless he is an official of the mine or is authorized in writing by the mine manager to give signals.

(2) Where the shaft is vertical and exceeds fifty (50) meters in depth, it shall be provided with sufficient number of guides to ensure smooth and safe travel of the cage or other means of conveyance.

(3) Above the topmost landing, the devices for holding the cage or other means of conveyance in the event of an over-wind shall be provided or the guides, runners or receivers shall be sprung.

(4) Where the shaft is vertical, protective roofing sufficient to prevent danger from anything falling in the shaft, shall be provided and maintained at the bottom of the shaft and at all landings where persons ascend or descend. The gap, both vertical and horizontal, between the protective roofing and the top of cage, when the cage is at the bottom of the shaft, shall not exceed fifteen (15) centimeters.

65. Main winding.---(1) At every shaft, other than a shaft in the course of being sunk, where a winding engine is used for the purpose of lowering or raising persons, the provisions contained in this rule shall have effect.

(2) In respect of every part of the winding installation, including pulleys or sheaves, cages, chains, distribution plates and detaching hooks, the following particulars shall be recorded in a bound-paged book kept for the purpose-

- (a) name of the manufacturer and the year of manufacture;
- (b) specifications and dimensions;
- (c) reference to every certificate supplied with the part; and
- (d) any other detail that may be necessary or required by the Chief Inspector or the Inspector concerned.

(3) All entries in the book kept under sub-rule (2), shall be made and signed by the engineer or other concerned competent person, and shall be countersigned and dated by the mine manager.

(4) Whenever any part or article is replaced or any repaired part or article used in any winding installation, the fact of such replacement or repair shall be recorded in the book kept under sub-rule (2).

(5) Where drum-clutches are provided, the following provisions shall have effect, namely--

- (a) the operating gear of the clutch of the drum shall be provided with locking gear to prevent inadvertent withdrawal of the clutch;
- (b) every engine used for the lowering or raising of persons shall have a suitable interlocking device so fitted that it is not possible-
 - (i) to un-clutch any drum unless the brakes of such drum are applied; or
 - (ii) to release the brakes until the drum clutch is fully engaged and securely locked; and
- (c) unless the cage or other means of conveyance attached to the drum is resting at the bottom of the shaft, the drum shall not be unclutched unless the winding engineman has assured himself immediately beforehand that the brake is fully applied.

(6) In the case of every shaft exceeding one hundred (100) meters in depth, unless exempted by the Chief Inspector by an order in writing and subject to such conditions as he may specify therein, the engine shall be fitted with an automatically recording speed indicator.

(7) In case of every shaft exceeding one hundred (100) meters in depth, there shall be provided an effective automatic contrivance to prevent over-speeding and over-winding, hereinafter referred to as the "Automatic Contrivance".

(8) The Automatic Contrivance shall prevent the descending cage from being landed at the pit bottom or other permanent landing at a speed exceeding 1.5 meters per second and shall also control the movement of the ascending cage in such a manner as to prevent danger to persons riding therein.

(9) The Chief Inspector may, by an order in writing, specify the maximum speed of winding in any shaft:

Provided that in case of any shaft the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, grant exemption from the provisions of this sub-rule and sub-rules (7) and (8).

(10) Tests of every Automatic Contrivance and every brake shall be made by the engineer or other competent persons appointed for the purpose, in the following manner, namely:

- (a) once at least every seven days, by raising each cage or other means of conveyance, in turn, to pass the last control point above the topmost landing:

Provided that where special conditions exist, the Chief Inspector, may, by an order in writing and subject to such conditions as he may specify therein, permit the tests aforesaid to be carried out in such other manner as he may specify in the order; and

- (b) unless the Automatic Contrivance is in full and fixed engagement with the winding engine, it shall be fully engaged, either automatically or by the winding engineman, wherever necessary to be lowered or raised, and a proper automatic indicator to show that this has been done shall be provided in such a position as to be easily seen by the engine driver. No person shall be allowed to enter any cage or other means of conveyance until the indicator shows that the Automatic contrivance has been fully engaged.

(11) Except where an Automatic Contrivance is provided to prevent over winding, a point shall be fixed and marked on the indicator of the engine in such a way as to show when the cage or other means of conveyance is at a distance of not less than twice the circumference of the drum from the completion of the wind, and if such cage or other means of conveyance contains persons, the winding engineman shall not, as soon as it has reached the point aforesaid, raise it for the remaining distance at a speed exceeding 1.2 meters per second.

984 (12) Where the only means of egress in a mine is by apparatus worked by electricity, precautions shall be taken to ensure that the two winding engines do not fail simultaneously, and in particular, in the case of electric winding engines, the engines shall be capable of being connected to two separate power supplies. Unless the Chief Inspector by an order in writing otherwise directs, the provisions of this sub-rule shall be deemed to be satisfied if an emergency winding gear is maintained.

(13) Unless otherwise permitted by the Chief Inspector by an order in writing and subject to such conditions as he may specify therein, every cage or other means of conveyance in which persons ride in a vertical or steeply inclined shaft shall be—

- (a) covered completely at the top;
- (b) closed in at the two sides in a manner sufficient to prevent persons or things from projecting beyond the sides; and
- (c) provided with a rigid hand-bar fixed in a position where it can be easily reached by all persons in the cage or other means of conveyance.

(14) The floor of every cage or other means of conveyance shall be strongly constructed and so maintained to prevent any part of the body of a person riding in the cage or other means of conveyance from projecting beyond the floor.

(15) Not more than such number of persons as may be authorized by the mine manager, shall be allowed to ride in the same cage or same deck of a cage or other means of conveyance at one time and a notice specifying the number shall be posted at the top of every shaft or winze and at every inset and landing:

Provided that where the Inspector concerned is of the opinion that the number so authorized is high, he may, by an order in writing, require the mine manager to fix a lower maximum number of persons as maybe specified by him.

(16) Unless permitted by the Chief Inspector by an order in writing and subject to such conditions as he may specify therein, the total load when the authorized number of persons ride at any one time in any cage or other means of conveyance, shall not exceed sixty (60%) percent of the maximum load when materials are loaded.

(17) No person shall, when ascending or descending a shaft, take with him any bulky material other than tools and instruments, except when engaged in repairing the shaft or with the written authority of the mine manager.

66. Winding of material.---(1) Every cage used for the raising or lowering of tubs shall be with catches or other effective contrivances to prevent the tubs falling out. The cage shall not be set in motion unless the catches or other effective contrivances are in position.

(2) The floor of every cage shall be kept clean and no skip, bucket or tub shall be filled up to such height that any of the contents can fallout.

(3) Before long timber, pipes, rails or other material projecting over the top of the cage or other means of conveyance are lowered or raised, the projecting ends shall be securely fastened to the rope, chain or bow.

67. Winding in sinking shafts.---(1) At every shaft in the course of being sunk, where a winding engine is used, the following provisions shall have effect, namely:

- (a) if the shaft is vertical and exceeds fifty (50) meters in depth, there shall be provided for each bucket or other means of conveyance a detaching-hook;
- (b) where the shaft is vertical and exceeds one hundred and fifty (150) meters in depth—
 - (i) the bucket or other means of conveyance, when used for lowering or raising persons, shall be provided with sufficient cover overhead for protection from things falling down the shaft; and
 - (ii) there shall be provided for each bucket or other means of conveyance a sufficient number of guides which shall be kept extended to within twenty (20) meters of the shaft bottom at all times when sinking is in progress:

Provided that the Chief Inspector may, by an order in writing, require the provision of guides in a shaft which is less than one hundred and fifty (150) meters in depth or is not vertical.

(2) There shall be provided and maintained two separate means of interchanging distinct and definite signals between the bottom and the top of the shaft. Efficient means shall also be provided and maintained for transmitting such signals from the top of the shaft to the winding engineman.

(3) The signaling appliances shall be examined by a competent person once at least in every twenty four hours. The result of every such examination shall be recorded in a bound-paged book kept for the purpose and shall be signed and dated by the person making the examination.

(4) In signaling, the code of signals provided in rule 64 shall be used and shall be transmitted by means provided.

(5) Every bucket or other means of conveyance in which persons or materials are transported, shall be of strong construction and so maintained as to prevent persons or materials from falling.

(6) At the top of the shaft or at the landing where the bucket or other means of conveyance is normally landed, suitable doors or covering shall be provided. Except as may be required for the passage of the bucket or other means of conveyance, the doors or covering shall always be kept closed.

(7) Where the shaft or winze has an inclination of thirty five (35) degrees or more from the horizontal and exceeds forty five (45) meters in depth measured along its plane, persons working at the bottom shall also be protected by a suitable protective covering extending over the whole area of the shaft sufficient space being left therein only for the passage of the bucket or other means of conveyance and the cover shall be kept lowered –

- (a) if the shaft or winze is vertical to not more than twenty two (22) meters from the bottom; and
- (b) in any other case, not more than thirty (30) meters from the bottom:

Provided that where special circumstances exist, the Chief Inspector may, by an order in writing an subject to such conditions as he may specify therein, grant an exemption from the provisions of this clause.

(8) Not more than such number of persons, as may be authorized by the mine manager, shall be allowed to ride in the bucket or other means of conveyance at one time and a notice specifying such number shall be posted prominently at the top of the shaft.

(9) When tools, instruments or other materials are lowered or raised, charge man or any competent person authorized by the mine manager, as the case may be, shall ensure that—

- (a) the bucket is properly loaded;
- (b) materials are not loaded above the rim;
- (c) long timber, pipes, rails, tools or other material with ends projecting over the rim are securely fastened to the rope, chains or bow; and
- (d) the bucket, before being sent away, is steadied and the bottom and sides thereof are free from adhering material.

(10) Where guides are provided, the bucket or other means of conveyance shall be raised slowly from the bottom of the shaft, until the rider is picket up.

(11) While persons are at work on any scaffold or platform in the shaft, the following precautions shall be strictly observed, namely:

- (a) the platform shall be secured to the sides of the shaft in order to prevent it from swinging;
- (b) the opening for the passage of the bucket or other means of conveyance, shall be so protected as effectively to prevent anything falling through it; and
- (c) the platform shall not be lowered or raised except under the order of the charge man or other competent person.

68. **Winding ropes.**---(1) At every shaft where a rope is used for winding purposes, the following provisions shall have effect, namely:

- (a) no rope, bar, link, chain or other attachment to a cage or other means of conveyance shall be used unless it is of good quality and manufacture, is free from any visible defect and is of adequate calculated strength:

Provided that the Chief Inspector may, by an order in writing, prohibit the use of any rope or type of rope or bar, link, chain or other attachment where, in his opinion such use is unsafe;

- (b) a single linked chain shall not be used, except for the short coupling chain attached to a cage or other means of conveyance. Such single linked chain shall be attached to the safety hook through approved appliance;
- (c) where safety-chains are used, their length shall be such that if the kingbolt breaks, the shock to the cage or other means of conveyance is as slight as possible;
- (d) the attachment between the rope and the cage or other means of conveyance shall be of such type and be maintained in such manner as to obviate accidental disconnection; and
- (e) in case of a doubt, as to the fitness of any rope, bar, link, chain or other attachment used or intended for use, it shall be referred to the Chief Inspector for decision.

(2) Except, in a sinking shaft less than thirty (30) meters in depth, every winding rope shall be made of cold drawn steel wire and the gauge of the wires used in the construction of such rope shall be suited to the diameter of the drums, pulleys and sheaves of the winding installation.

(3) In any shaft, including a shaft in course of being sunk, where persons are lowered or raised and where guides are not provided, no rope other than a rope of non-spinning type shall be used.

(4) No rope which has been spliced shall be used for winding purposes.

(5) No winding rope shall be used or continued in use, if its safety factor (i.e. the ratio between breaking load on the rope at any point and the maximum static load on it when the cage or other means of conveyance is at the lowest working point) is or becomes—

- (a) less than 10 in the case of a shaft not exceeding three hundred (300) meters in depth;
- (b) less than 9 in the case of a shaft exceeding three hundred (300) meters but not exceeding five hundred (500) meters in depth;
- (c) less than 8 in the case of a shaft exceeding five hundred (500) meters but not exceeding seven hundred (700) meters in depth;
- (d) less than 7 in the case of a shaft exceeding seven hundred (700) meters but not exceeding one thousand (1000) meters in depth; and
- (e) less than 6 in the case of a shaft exceeding one thousand (1000) meters but not exceeding fifteen hundred (1500) meters in depth.

(6) For every rope in use or intended for use, a certificate showing its breaking load, quality, construction and diameter (obtained from the manufacturer or supplier) and a history of its use, including record of diameters of the drums, sheaves and pulleys used in conjunction with the rope, shall be kept in a bound-paged book kept for the purpose. All entries therein shall be made and signed by the engineer or other concerned competent person and shall be countersigned and dated by the mine manager.

(7) If in the case of a new rope a test certificate as to the amount of its breaking load is not available, it shall not be used unless a portion thereof, not less than three meters in length, has been cut off and tested in a laboratory, institution or test house approved by Government for the purpose.

(8) No winding rope which has been in use for more than one and half year shall be used for winding purposes:

Provided that where the Chief Inspector or Inspector concerned is satisfied that due to sparing use any such rope is in good condition even after the expiry of the said period, he may, by order writing and subject to such conditions as he may specify therein, allow the use of such rope for a longer period.

(9) Every application for permission to use a rope after the period of one and a half year as aforesaid shall be accompanied by a copy of the entries, in respect of the rope, in the book kept for the purpose under sub-rule (6), and also by certificate as to the strength of the rope, obtained in the manner laid down in sub-rule (7). The certificate aforesaid shall relate to a piece of the rope cut off not more than three months prior to the date of the application:

Provided further that where the Chief Inspector or the Inspector concerned is of the opinion that any rope has become unsafe for use in a shaft before the expiry of the period of one and a half year as aforesaid, he may, by an order in writing, prohibit the use of such rope for winding purposes.

(10) No mode or type of capping shall be used, which fails to withstand a load of at least ten times the maximum static load thereon.

(11) The cappel of a round rope shall not be attached to the rope by rivets passing through the rope.

(12) In those forms of capping, in which the wires at the end of the rope are bent back on the rope itself to form a cone, wedges formed by the lapping of soft iron wire shall be placed between the rope and that portion which is bent back. The length of the tapered portion of the socket shall be not less than twelve times the diameter of the rope.

(13) Where white metal is used in the capping of ropes, the tapered portion of the socket shall not be less than eight times the diameter of the rope.

(14) If white metal is used in the capping of ropes—

- (a) its melting point shall not exceed three hundred (300) degrees centigrade, and its temperature when poured into the socket shall not exceed three hundred and sixty three (363) degree centigrade; and

- (b) in the length of rope which is to lie within the tapered part of the socket, the fiber core, if any, shall be cut and the wires shall be untwisted and thoroughly cleaned.

69. Examination of winding equipment.---(1) It shall be the duty of the engineer or other concerned competent person to examine—

- (a) once at least in every twenty four hours-
 - (i) the attachment of the winding rope to the drum;
 - (ii) the depth indicator;
 - (iii) every part of the shaft, including cages or other means of conveyance and their gates;
 - (iv) every external part of the winding apparatus, upon the proper working of which the safety of persons depends;
 - (v) the brakes of the winding engines;
 - (vi) each winding rope, by passing the rope at a speed not exceeding one meter per second;
 - (vii) the external parts of the winding engine; and
 - (viii) the guides and the signaling arrangements fitted in a shaft; and
- (b) once at least in every thirty (30) days-
 - (i) every winding rope, by passing the rope at a speed not exceeding thirty (30) meter per minute. For the purpose of this examination, the rope shall be cleaned of any entrusted dirt and grease at all places particularly liable to deterioration and at other places, not more than thirty (30) meters apart throughout the length; and

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- (ii) any reduction in the circumference of the rope and the superficial condition of the wires as to wear, corrosion, brittleness and fracture at every such place shall be noted; and
 - (c) once at least in every six (6) months, the winding engine as to the condition of its internal parts.

(2) A report of every examination made under sub-rule (1), shall be recorded in a bound-paged book kept for the purpose, and shall be signed and dated by the person who made the examination and countersigned and dated by the engineer, or where there is no duly qualified engineer, by the mine manger:

Provided that where the examination under sub-rule (1), is carried by engineer, the report shall be signed and dated by engineer and countersigned and dated by the mine manager.

(3) If on any examination made under sub-rule (1), there is discovered any weakness or defect by which the safety of persons may be endangered, such weakness or defect shall be immediately reported in writing to the engineer or other concerned competent person and to the mine manager; and until such weakness or defect is remedied the winding installation shall not be used.

70. Gates and fences.---(1) At the top of every shaft or incline and at every inset which is in use, there shall be provided suitable gates or fences which shall effectively close the openings into the shaft at all times when a cage or other means of conveyance is not at the top or the landing. Except with the permission of the Chief Inspector by an order in writing and subject to such conditions as he may specify therein, every such gate at the top of a shaft shall be self-operating.

(2) At every landing where it is necessary for persons to pass from one side of the shaft to the other, an adequate pass-by shall be provided for enabling them to do so without entering or crossing the shaft. Every pass bye so provided shall be not less than 1.8 meters high and 1.2 meters wide and shall be kept clear of all obstructions.

(3) No person shall enter or cross or be permitted to enter or cross the winding compartment of a shaft or incline except for the purpose of entering or leaving a cage or other means of conveyance or for undertaking an examination, repair or any other work therein and no persons shall be allowed to work in any such space unless the cages or other means of conveyance, if any, have been stopped and adequate precautions have been taken for the protection of such person.

71. Duties of persons riding or working in shafts.---(1) No person shall get off a cage or other means of conveyance after the same has been signaled to be set in motion or leave it until it has reached the appointed stopping place, nor shall any person ride on the top or edge of any cage or other means of conveyance except when engaged in an examination, repair or any other work in the shaft.

(2) Every person, when at or about the top or bottom of a shaft or any inset, shall obey the lawful orders and directions of the bellman, as the case maybe.

(3) No person shall carry out any examination, repair or other work in any shaft while winding operations are being carried on and no winding shall be carried on or permitted while persons are engaged in such examination, repair or work, except where winding is necessary for the same.

(4) The person in immediate charge of any examination, repair or work in any shaft shall warn the winding engineman that such examination, repair or work is about to be undertaken.

(5) Every person while engaged in any examination, repair or other work in a shaft shall be accompanied by at least one other person and all such persons shall be provided with effective safety belts unless otherwise efficiently protected against the risk of falling.

(6) Every person engaged in carrying out an examination, repair or other work in a shaft shall be protected by suitable covering from objects falling from above. Every such person shall also be provided with a protective hat and shall wear the same when so engaged.

72. General precautions.---No unauthorized person shall enter or be allowed, in a winding engine room. Woman shall not descend or ascend a shaft in a cage or other means of conveyance unless accompanied by one or more adult males.

CHAPTER-VIII **SHAFTS AND OUTLETS**

73. Danger from surface water.---(1)Where any mine or part thereof is so situated that there is any danger of in-rush of surface water in to the mine or part thereof, adequate protection against such in-rush shall be provided and maintained. If any dispute arises as to whether such protection is adequate or not, it shall be referred to the Chief Inspector for decision.

(2) No workings shall be made in any mine vertically below-

- (a) any part of any river, canal, lake, tank or other surface reservoir; or
- (b) any spot lying within a horizontal distance of three hundred (300) meters from either bank of a river or canal or from the boundary of a lake, tank or other surface reservoir or residential buildings, except with the permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

(3) Every application for permission under sub-rule (2), shall be accompanied by two copies of a plan showing-

- (a) the existing position of the workings of the mine;
- (b) the proposed layout of workings;
- (c) the depth of the workings from the surface;
- (d) the position and depth of any stopped-out area in the neighborhood;
- (e) all faults and other geological disturbances; and
- (f) such other particulars as may affect the safety of the mine or of the persons employed therein.

Explanation: Where sand or alluvium are lying in the course of a river, canal, lake, tank or reservoir, the depth from the surface shall be reckoned from the surface of hard ground underlying such sand or alluvium.

74. **Danger from underground inundation.**---(1) Proper provision shall be made in every mine to prevent irruption of water or other liquid matter from the workings of the same mine or of an adjoining mine.

(2) No working which has approached within a distance of sixty (60) meters of any disused or abandoned workings (not being workings which have been examined and found to be free from accumulation of water or other liquid matter), whether in the same mine or in an adjoining mine, shall be extended further except with the prior permission in writing of the Chief Inspector and subject to such conditions as he may specify therein:

Provided that if any heavy seepage of water is noticed in any working approaching, but not within sixty (60) meters of, any such disused or abandoned working, such working shall be immediately stopped and the Chief Inspector and the Inspector concerned shall forthwith be informed about the occurrence. The workings shall not be extended further except with the prior permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

Explanation: For the purpose of this sub-rule, the distance between the said workings shall be the shortest distance between the said workings measured in any direction whether horizontal, vertical or inclined.

(3) Every application for permission under sub-rule (2), shall be accompanied by two copies of a plan showing the outline of such disused or abandoned workings in relation to the workings which are approaching the said workings and such other information as may be available in respect of the said workings.

(4) Except where otherwise permitted by the Chief Inspector by an order in writing and subject to such conditions as he may specify therein, no such working shall exceed two meters in width or height and there shall be maintained at least one bore-hole near the center of the working face and sufficient flank holes on each side and where necessary, bore-holes above and below the

workings, at intervals of not more than five meters. All such bore-holes shall be constantly maintained at sufficient distance in advance of the working and such distance shall in no case be less than three meters. These precautions shall be carried out under the direct supervision of a competent person specially authorized for the purpose.

(5) The precautions laid down in sub-rule (4), shall also be observed in any other working where any heavy seepage of water is noticed whether approaching disused or abandoned workings or not.

75. Owner or agent etc. not to employ person in a mine in certain cases.---The owner, agent or mine manager shall neither employ any person in the mine nor permit any person to be in the mine for the purpose of employment therein unless there are at least two outlets, not nearer to one another than ten (10) meters, affording separate means of ingress and egress available to all the persons employed in the mine.

76. Proper arrangements to be made for ascending or descending persons.---Proper arrangements shall be made for persons to descend to, and ascend from, the mine at each of such shafts or outlets. If apparatus is necessary, it shall be kept on the works belonging to the mine and shall be constantly available for use.

77. Provisions of this Chapter not to apply to certain shafts and outlets.---The provisions of this Chapter with respect to shafts and outlets shall not apply-

- (a) while a shaft is being sunk or an outlet is being made;
- (b) to any working for the purpose of making a communication between two or more shafts or outlets; and
- (c) to any working for the sole purpose of searching for or proving minerals.

78. Limit of employment in mine having single shaft.---(1) At a mine having single shaft or outlet not more than twenty persons shall be employed underground at any one mine.

(2) The Chief Inspector may exempt from the operation of sub-rule (1), subject to such conditions as he may think fit to impose, any mine in the case of which special difficulties exist which in his opinion make compliance with the provisions of this rule not reasonably practicable.

CHAPTER-IX MINE WORKINGS

79. Surface workings.---(1) In surface workings, the following precautions shall be strictly observed, namely:

- (a) the sides shall be stepped, secured and sufficiently sloped in such a manner as to prevent danger from falls of material;
- (b) the height of any bench shall not exceed eighteen (18) meters and the breadth thereof shall not be less than twelve (12) meters:

Provided that the Chief Inspector or the Inspector concerned may, by an order in writing and subject to such conditions as he may specify therein, exempt from the operation of this clause any working in the case of which special difficulties exist, which in his opinion make compliance with the provisions thereof not reasonably practicable;

- (c) where an open working is worked in steps, steps shall be of sufficient breadth in comparison with their height to secure safety;
- (d) all loose ground and materials, the overburden and trees liable to fall shall be removed sufficiently far from the edge or otherwise made secure in order to prevent danger from fall to persons employed in the mine;
- (e) where any pillar is left 'in situ' for the purpose of measurement, its height shall not exceed 2.5 meters and where the height of such pillar exceeds 1.25 meters, the base of the pillar shall not be less than 1.6 meters in diameter; and

- (f) where float or other similar deposit is worked by manual means on a sloping face, the face shall be benched and the sides shall be sloped and secured. The height of any bench shall not exceed six meters and the breadth thereof shall not be less than the height:

Provided that where the body consists of comparatively hard and compact rock, the Chief Inspector or the Inspector concerned may, by an order in writing and subject to such conditions as he may specify therein, permit the height of the bench to be increased up to 7.5 meters while its width is not less than six meters:

Provided further that in case of a mine or part thereof where special difficulties exist, the Chief Inspector or the Inspector concerned may, by an order in writing and subject to such conditions as he may specify therein, relax the provisions of this clause and clause (e).

(2) Where in any mine or part thereof, it is proposed to work by a system of deep-hole blasting and or with the help of heavy machinery for its digging, excavation and removal in such manner as would not permit of compliance with the requirement of sub-rule (1), the owner, agent or the mine manager shall, not less than sixty days before starting such work, give notice in writing of the method of working to the Chief Inspector and the Inspector concerned and no such work shall be commenced or carried out except in accordance with such conditions as the Chief Inspector may specify by an order in writing.

(3) Every such notice under sub-rule (2), shall be induplicate and shall give the details of the method of working including the precautions that are proposed to be taken against the danger from falls of sides and material.

(4) In an excavation made in hard and compact ground or in prospecting trenches or pits, the sides shall be adequately benched, sloped or secured so as to prevent danger from fall of sides.

(5) No person shall undercut any face or side or cause or permit such undercutting as to cause any overhanging.

(6) Every footpath along which loads are carried in open working by human agency shall comply with following requirements-

- (a) its breadth shall not be less than three feet;
- (b) its slope shall not be greater than 1 verticals to 2 horizontal; and
- (c) at every place where its slope exceeds 1 verticals to 4 horizontal reasonably level steps shall be provided such that the vertical heights of every step does not exceed seven (7) inches and dimensions of every step measured horizontally from the edge to the back is not less than fourteen (14) inches.

80. **Underground workings.**---In every mine worked by a system of workings below ground, the following provisions shall have effect, namely:

- (a) Unless otherwise permitted by the Chief Inspector by an order in writing and subject to such condition as he may specify therein, the height of every main drive shall not be less than 1.9 meters and width 1.9 meters while maximum width and height of any entry shall not be more than 2.7 meters and 2.8 meters, respectively:

Provided that in case of a mine or part thereof where special difficulties or conditions exists, the Chief Inspector may, by an order in writing and subject to such conditions as he may require for the safety of mine and of persons employed therein, relax the provisions of this clause:

- (b) In any underground part of a mine where adequate stationary lights are not in use, every person shall carry alight;
- (c) No persons shall work in any place other than a place in which he has been ordered to work by an official of the mine or by any persons in whose charge he has been placed by officials of the mine;

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- (d) An adequate amount of ventilation shall be constantly produced in every mine to clear away smoke and dilute and render harmless inflammable and noxious gases to such an extent that the working places of the shafts, levels and working of the mine and the travelling roads to and from these working places shall be in safe state for persons working or passing therein;
 - (e) Underground working and shafts sumps and winzes which have been in disuse for some time shall be examined before again being used in order to ascertain whether foul air or other dangerous gases have accumulated there in and also to ascertain the condition of the roof and sides and only such workmen as may be necessary to make such examination shall be allowed to proceed to such places as are certified to be in a safe state to work and travel in;
 - (f) If a working place or travelling road is found to be unsafe, all persons shall be withdrawn immediately from the dangerous area and all access to such working place or travelling roads, except for the purpose of removing the danger or saving life, shall be prevented by securely fencing the full width of all entrances to the place;
 - (g) The top and all entrance between the top and bottom of shafts, winzes, shoots or sliding holes and any opening into a stop more than three (3) meters deep below drive and other dangerous opening, shall be provided with a permeation or removable barrier in order to prevent person or things from falling in to them;
 - (h) When a shaft, winze, raise or stop leads directly into a travelling road or place where persons are stationed at work, the traffic at such points shall be protected against danger from anything falling from above.
 - (i) At every shafts station where it is necessary for persons to pass from one side of the shafts to the other, provisions shall be made enabling them to do so without entering or crossing a winding compartment;

- (j) All ladders, ladder ways, platforms, doors fences and other appliances and things in use underground shall be maintained in proper repair. Temporary ladders, platforms or other means of climbing or keeping footing while at work shall be provided in sinks, winzes, raises, stops and other places where they are needed; and
- (k) Where any working is approaching in any place containing or likely to contain a dangerous accumulation of water, the working shall not exceed 1.8 meters in advance of the fence and at such angles from the working as is necessary to obviate the danger of a sudden breaking through of such water.

81. Protective works before a mine is closed.---(1) The Chief Inspector may, by an order in writing, require the owner of any mine to which sub-rule (3) of rule 4 applies, to construct in the mine belowground or on the surface such protective works within such time as he may specify therein.

(2) Until the protective works have been constructed to the satisfaction of the Chief Inspector, the means of entering the mine at not less than two entrances shall be kept intact and in working in the order.

82. Working near mine boundaries.---(1) The owner, agent or mine manager shall fix boundaries of the mine and shall not be changed except with the permission of the Chief Inspector in writing and subject to such conditions as he may specify therein.

(2) No working shall be made within a distance of ten (10) meters of the boundary of any adjacent mine not owned by the owners and, in case of a disputed boundary, no working shall be made within a distance of fifteen (15) meters of the boundary claimed by the owner of an adjacent mine until such time as a binding agreement has been reached as to the correct boundary or the question has been finally determined by the Licensing Authority or a court of law:

Provided further that, where the workings of any mine for any reason, are extended or get extended within any shorter distance than what is laid down herein above, the Chief Inspector may, by an order in writing, require the owner to construct such protective works within such time as he may specify in the order.

Explanation: For the purpose of this rule the Licensing Authority means the Licensing Authority as defined in clause (u) of section 2 of the Khyber Pakhtunkhwa Mines and Minerals Act, 2017 (Khyber Pakhtunkhwa Act No. XXXVI of 2017).

(3) Notwithstanding anything contained in sub-rule (2), the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit the workings of any mine or part thereof to extend within any shorter distance than 10 or 15 meters as mentioned in sub-rule (2) or may require that the said working shall not extend further than a specified distance, not exceeding fifty (50) meters of such boundary.

83. Support of workings.---(1) The roof or back, hanging wall, footwall and sides of every roadway and working place, including airways and travelling roadways to second outlets, shall be made and kept secure.

(2) If the Chief Inspector or the Inspector concerned is of the opinion with respect to any mine or part thereof that systematic support for the roof or back, hanging wall, footwall and sides or either of them, ought to be provided and maintained for the purpose of securing the safety of persons employed therein, he may serve upon the owner, agent or mine manager an order in writing specifying the mine or part thereof, stating that he is of opinion aforesaid and requiring the maintenance of support in the manner which he may specify in the order.

(3) The mine manager shall hand over copies of the order made under sub-rule (2) to all other supervising officials concerned working under his control and shall also post such copies at conspicuous places in the mine. The mine manager and supervising officials shall be responsible for securing effective compliance with the order made under sub-rule (2) and the mine or part thereof shall not be worked in contravention thereof.

84. Mine supports.---(1) Where the ground is not safe, all shafts in use shall be made secure within the timber work or other means of support.

(2) Every piece of timber or any other kinds of supports shall be set securely and on a secure foundation and whenever it becomes loose or broken shall, as soon as possible, be tightened or replaced.

(3) Every chock used as a support shall be well built on a secure foundation and shall be made and kept tight. Only rectangular or square cut pieces of material timbers shall be used. In case of timber, it shall be sufficient at least two opposite sides to provide flat surfaces.

(4) The sides of every pack used for the purpose of support shall be well built on secure foundation. The pack shall be filled with debris or other suitable incombustible material, if so required by the Chief Inspector or Inspector concerned, as shall be made as tight as practicable over its whole area.

(5) In case of working through friable ground, substantial timber supports with tight lagging shall be provided in case of back cavities, sand or other material bestowed for the purpose of support and shall be paced tight.

(6) Except where it is no longer necessary for purposes of support, any support dislodged by or removed for any operation shall be replaced with the least possible delay.

(7) In every place wherein a fall of ground involving the displacement or breakage of supports has occurred, no work of clearing the fall or any part thereof shall be undertaken until the newly exposed roof or back hanging wall, footwall or side has been examined and made safe, if necessary, by temporary supports.

85. Steep workings.---(1) In workings having an inclination of thirty (30) degrees or more from the horizontal, adequate precautions shall be taken to prevent danger to persons from falling or rolling of timber, tools or other appliances or material.

(2) No person shall work or be permitted to work at any place having an inclination of forty five (45) degrees or more from the horizontal, where he is likely to slip or overbalance, unless he is secured by a safety belt or life line or is otherwise safeguarded or to ensure his safety by other means permitted by the Chief Inspector.

86. Fencing and gates.---(1) Unless otherwise permitted by the Chief Inspector by an order in writing and subject to such conditions as he may specify, the top of every surface working shall be kept securely fenced.

(2) Where an excavation which has been formed as a result of any mining operation, extends within a distance of fifty (50) meters from a public road or any building, substantial fencing shall be erected and maintained around the excavation.

(3) Where as a result of mining operations, a subsidence of the surface has taken place or is likely to take place and persons are likely to be endangered thereby, the owner, agent or mine manager shall keep the entire surface area securely and effectively fenced.

(4) Every entrance to a shaft, winze, chute, sump, store or other dangerous place shall be provided with an efficient fence, barrier or gate, so designed and constructed as to effectively prevent any person from entering or falling therein.

(5) Where a shaft, winze, raise, chute, or stop leads directly into a working place or travelling roadway, such place or roadway and any working place situated on its dip side, shall be securely guarded or otherwise protected as to prevent danger to persons from falling materials.

(6) Every entrance from a roadway in a mine to a part of the mine which, for the time being, is neither being worked nor being used for any purpose, by reason of any cause whatsoever, shall be provided with a fence, barrier or gate so designed and constructed as to prevent any person from inadvertently entering that part of the mine.

(7) Shaft and open workings temporarily or permanently out of use and any place in or about an excavation which is dangerous shall be completely filled in or kept securely fenced.

(8) Before a mine is abandoned or the working thereof discontinued, the owner, agent or mine manager shall cause the top or entrance of every shaft, incline or other opening into the mine to be fenced by a structure of a permanent character sufficient effectively to prevent persons falling into or entering the same.

87. Examination by mine manager or competent person.—(1) Every place in a mine, whether belowground or above ground including travelling roadways and landings, where work is carried on or where persons are stationed or required to pass shall be placed under the charge of a competent person appointed by the mine manager or under manager.

(2) The mine or part thereof assigned to a mining mate or other competent person shall not be of such a size nor shall any additional duties other than his duties under these rules or any other rules framed under the Act, shall be such, as to be likely to prevent him from carrying out in a thorough manner the duties prescribed for him under these rules. If any doubt arises as to the foregoing, it shall be referred to the Chief Inspector for decision.

(3) At the entrance to every mine or part thereof, one or more stations shall be fixed by the mine manager and except in the case of a mine working in a continuous succession of shifts, no person other than the persons making the examination or an official shall pass beyond any such station until all roadways and working places to which such persons are required to have access, have been examined by the competent person in charge of the mine or part thereof and found to be satisfactorily ventilated and in safe condition.

(4) Every such station as provided in sub-rule (3), shall be legibly marked 'STATION' and shall be of such a size as to accommodate all the persons employed therein in any one shift.

(5) The mine manager or other competent person accompanied by such assistants, as may be required shall, within two hours before the commencing of work in a shift, inspect every part of the mine or part thereof assigned to him, in which persons have to work or pass during the shift and all roadways and working places where work is temporarily stopped and shall ascertain the condition thereof as regards ventilation, the presence of gases, the state of the roof and sides, presence of fumes and other risks and generally so far as the safety of the persons is concerned.

(6) Similar inspections shall be made once at least in every four hours during which the shift continues, of all the roadways and other working places to which persons engaged in the mine or part thereof are required to have access.

(7) The mine manager or other competent person shall, at the completion of his shift, record without delay the result of his inspections made under sub-rule (5) or sub-rule (6), in a bound-paged book kept for the purpose.

(8) Every such report under sub-rule (7), shall be full and accurate report of the inspections and shall include the following, namely:

- (a) the details of inspection;
- (b) the number of persons working under his charge;
- (c) such instructions for the purposes of securing the safety of the persons as he may have given during his shift; and
- (d) the date and time of the inspections, the signature of the mine manager or other competent person and the date and time when the report was written.

(9) In case of a mine where any other system of examination of working places has been in force, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit such a system to continue in lieu of the system of examination laid down in sub-rules (4) and (5).

(10) In the case of a shaft in the course of being sunk, the competent person or charge man shall—

- (a) have entire charge of the shaft bottom and shall, in his shift, remain in the shaft while persons are at work at the bottom of the shaft. He shall be the last person to ascend the shaft at the end of the shift and if his shift is succeeded immediately by another shift, he shall not leave the bottom of the shaft until after the descent of the charge man of the succeeding shaft; and
- (b) after each round of shots and at the beginning of every shift, and after every cessation of work in the shaft for a period exceeding two hours, shall examine the sides of the shaft and remove all loose pieces before persons are allowed to descend.

88. Avoidance of dangers.---(1) If at any time it is found by the mine manager or competent person in charge of a mine or part thereof that by reason of any cause whatsoever, the mine or part thereof is dangerous, he shall immediately withdraw all persons from the mine or part thereof and the mine or part thereof shall be fenced off so as to prevent persons inadvertently entering therein.

(2) If the danger is explored by the competent person, he shall also immediately inform the mine manager about the danger and shall record the fact in the book kept for the purpose.

(3) The mine manager shall make or cause to be made by a competent person, a careful examination of the mine or part thereof and no person shall, except in so far as is necessary for enquiring into the cause of the danger or for the removal thereof or for exploration, be re-admitted into the mine or part thereof until the mine or part thereof is reported to be safe.

(4) A report of every such examination shall be recorded without delay in a bound-paged book kept for the purpose and shall be signed and dated by the person who made the examination.

(5) If the work of removing the danger is suspended before the danger is removed, the mine or part thereof shall be securely fenced off effectively to prevent persons entering therein during the period of suspension.

89. Safety against irruption of water.---Where any part of a mine is so situated that there is any danger of irruption of surface water into mine, adequate protection against such irruption shall be provided and maintained.

90. General precautions.---(1) Where several persons are working together in any place, one of them shall be placed in charge. No person shall be so appointed unless he is twenty one (21) years of age and has had not less than three years experience in the workings of amine.

(2) Every person shall carefully examine his working place before commencing work and also at intervals during the shift. If any dangerous conditions are observed, he shall cease all work at that place and shall either take immediate steps to remove such danger or inform the mine manager or the

competent person in charge of the mine or part thereof. Where several persons are working together and one of them is in charge, the examination required by this sub-rule shall be made by the person in charge.

(3) No person shall work or travel on any footpath less than 1.5 meters wide, from which he will be likely to fall and more than 1.8 meters length, unless he is protected by guard rails, fence or rope suitably fixed and sufficiently strong to prevent him from falling.

(4) No person shall carry or be permitted to carry any load along a road or footpath having an inclination of thirty (30) degrees or more from the horizontal.

(5) Every road or footpath, along which loads are carried by human agency, shall comply with the following requirements, namely:

- (a) its breadth shall not be less than one meter; and
- (b) at every place where the inclination exceeds fifteen (15) degrees from the horizontal, level steps shall be provided such that the vertical height of every step does not exceed 0.2 meters and the distance from the edge to the back is not less than 0.3 meters.

Explanation: Gang-planks used for loading purposes shall not be deemed to be part of a footpath for the purposes of this sub-rule:

Provided that every gang-plank shall be so inclined or constructed as to give a secure foot-hold.

(6) No person shall be employed to lift, carry or move a load as heavy as is likely to cause bodily injury or injury to health of that person. In case of any doubt as to whether risk of bodily injury or injury to health is involved, it shall be referred to the Chief Inspector for decision.

(7) Every person shall ensure that tools, wood, stones or other articles are not put down or allowed to remain, in or near a shaft, winze or opening into a stope where work is going on, in such position as may result in their falling into the shaft, winze, or stope, as the case maybe.

(8) No person shall cast any material down any chute, passage or stope or other place until he has assured himself that no other person is in the way.

(9) No person shall work or be permitted to work alone in any remote part of a mine where, in case an accident occurs he would not soon be discovered or assisted.

(10) No inexperienced person shall be employed in the mine for any work whereby he or other persons can be seriously endangered, except under the supervision and guidance of an experienced person.

CHAPTER-X LADDER WAYS AND PLATFORM

91. Provision of ladder ways.---(1) Every shaft, raise or winze, in the course of being sunk, which has an inclination exceeding twenty five (25) degrees from the horizontal, shall be provided with a ladder way from top to the bottom.

(2) Ladders shall be placed so as to cover the opening in the platforms:

Provided that in cases where timber and supplies are handled, a portion of this opening may be to one side of the ladder and in the opposite corner of the platform. Exception in respect of the lowest 9.1 meters of a sinking shaft, ladder shall be fixed at an inclination of not less than 0.3 meter horizontal for every 3.0 meters vertical:

Provided further that where exceptional circumstances require, they may, with the consent of the Inspector concerned, be fixed at a steeper inclination.

(3) All platforms shall be securely fenced.

(4) All ladders shall be securely fastened to the sides of timbering of the shafts.

(5) All ladders shall project at least 0.9 meters above shafts —top and above every platform or strong holdfasts shall be provided at these places in convenient positions.

92. Closing off ladder way in some cases.---A Ladder way, which is a compartment of a shaft used for other purpose, shall be closed off from the other compartment, to such an extent as to prevent injury to workmen passing up and down the ladder way.

93. Ladder way to be provided with door, etc.---Every ladder way opening in any travelling road or place where men are stationed or pass shall be provided with a door or with a substantial fence.

94. No tools to be carried in a ladder way.---No person shall carry or be permitted to carry any drill, tools or any loose material in a ladder way in a vertical or steeply inclined shafts or winze, except so far as may be necessary in executing repairs.

95. Ladder way to be made of best material.---All ladders and platform shall be made of the best materials and kept in good condition. The breaking load of the ladders and platforms shall at no time be less than three times their working load.

96. Examination of ladders.---(1) All ladders and platforms used in a mine by persons working in a mine shall be examined by a competent person appointed by the mine manger in writing for this purpose, within two hours before the commencement of work in a shift.

(2) The result of every such examination made under sub-rule (1), shall be recorded in a book kept at the mine for this purpose. The reports shall be signed by the persons who made the inspection and shall state the date and time of the inspection and date and time when the report was written.

CHAPTER-XI

VENTILATION AND LIGHTING

97. Adequate ventilation.---(1) It shall be the duty of the owner, agent or mine manager to take such steps as are necessary for securing that there is constantly produced in all parts of the mine belowground, ventilation adequate to clear away smoke, steam and dust and to dilute gases that are toxic or noxious so as to render them harmless and to provide adequate quantity of oxygen and to prevent such excessive rise of temperature or humidity as may be harmful to the health of persons. If any doubt arises as to whether the ventilation in a mine or part thereof is adequate or not, it shall be referred to the Chief Inspector for decision.

(2) For the purpose of sub-rule (1), the place in an underground mine shall not be deemed to be in a safe state for persons to work or pass therein if the air contains oxygen, carbon dioxide or any noxious or poisonous gas in a quantity likely to affect the health of any person and such place shall not be deemed to be normally kept free from constant monitoring if the percentage of such gas at any point in that place exceeds than permissible limit.

98. Auxiliary ventilation.---(1) If with respect to any mine or part thereof, the Chief Inspector or the Inspector concerned is of the opinion that the ventilation is not adequate or to prevent danger from inflammable and noxious gases he may, by an order in writing, require the installation and maintenance of such a mechanical ventilator as is capable of producing adequate ventilation in the mine.

(2) Every mechanical ventilator shall be installed in a fireproof housing situated at a safe distance from the opening of mine, adit, shaft or winze and every mechanical ventilator other than booster or an auxiliary fan shall be so designed and maintained that the current of air can be reversed when required.

(3) In every mine if electricity is used for driving the mechanical ventilators, current shall be supplied to drive the motor of the ventilator through a separate circuit from the main distribution point of the mine.

(4) There shall be provided and maintained at every mine mechanical ventilator—

- (a) with suitable pressure-recording gauge or water gauge; and
- (b) except where the ventilator is driven by a constant speed drive, with a recording instrument by which the speed of the ventilator shall be continuously registered.

(5) At every shaft, raise or winze ordinarily used for lowering or raising of persons or material where a mechanical ventilator is installed there shall be provided a properly constructed air-lock:

Provided that unless the Chief Inspector or the Inspector concerned so requires by an order in writing, the provision of this sub-rule shall not apply to a shaft, raise or winze where a mechanical ventilator was installed.

(6) The flow of air produced by a mechanical ventilator shall, as far as practicable be so arranged as to aid the natural ventilation.

(7) Every mechanical ventilator shall be under the charge of a competent person appointed for the purpose, who shall not be entrusted with any other additional duties which may require him to go outside the fan house or which may interfere with his duties as in charge of the mechanical ventilator.

(8) In every mine in which a mechanical ventilator is in use, the quantity of air circulating in every ventilating district shall be measured once at least in every seven days and recorded in a bound-paged book kept for the purpose.

(9) The intake air shall be so arranged as to travel away from all stagnant water.

(10) In any mine or part where a mechanical ventilator is used, every, drift, drive, crosscut, winze or raise which is a connection between a main intake airway and a main return airway shall, until it has ceased to be required and has been sealed off, be provided with at least two doors so spaced that whenever one door is opened, the other door can be kept closed. Steps shall be taken to ensure that at least one of the doors is always closed. Any such connection which has ceased to be so required, shall be effectively sealed.

99. Mine to be divided into districts or splits for the purpose of ventilation.---For the purpose of ventilation, every mine shall be divided into such number of districts or splits as to ensure that separate current of fresh air is made available in every such district or split.

100. Brattices, doors, stoppings and air crossings.---(1) There shall be provided and maintained in every underground mine such number of stoppings, doors and other devices as may be adequate to ensure compliance with the provision of rule 103. If any doubt arises as to the adequacy of such ventilation devices, it shall be referred to the Chief Inspector for decision.

(2) The following provisions shall apply to the maintenance of doors, stoppings or other devices in every underground mine, namely:

- (a) the space between the frame or every ventilation door and the roof and sides of the road, shall be built up with masonry or concrete adequate thickness;

- (b) every such door shall be self-closing and whenever opened, it shall be closed as soon as possible, and shall not be propped or fixed so as to remain open;
 - (c) if such door is required to be frequently kept open for the passage of men or material, there shall be, throughout every working shift, a door attendant at the door; and
 - (d) unless required for purposes of control of fire or otherwise, if a door is not in use, it shall be taken off its hinges and placed in such a position that it shall not cause any obstruction to the air current.
- (3) Every stopping between the main intake and main return airways shall be constructed of masonry or brickwork with such greater thickness as may be required by the Chief Inspector or Inspector concerned and shall be faced with a sufficient thickness of cement plaster to prevent leakage of air. Every stopping in use shall be kept accessible for inspection.
- (4) The partitions and walls of every air-crossing shall be not less than twenty five (25) centimeters in thickness if constructed of masonry or of concrete not properly reinforced, and not less than fifteen (15) centimeters in thickness if constructed of properly reinforced concrete.
- (5) Every air-crossing, ventilation stopping, door or brattice shall be maintained in efficient working order.
- (6) A competent person shall, once at least in every fifteen (15) days, examine every airway, air crossing, ventilation stopping and door in use, and shall record the result thereof in a bound-paged book kept for the purpose, and shall sign the same and date his signature.
- (7) Every person after passing through a door or brattice cloth shall at once close it.

101. Auxiliary fans.—(1) Every auxiliary fan-

- (a) shall be installed, located and worked in such a manner that-
 - (i) a sufficient quantity of air shall at all times reach the mine so as to ensure that it does not re-circulate air; and

(ii) there is no risk of the air which it circulates being contaminated by any substantial quantity of poisonous or noxious gases or dust; and

(b) shall have an air-duct for conducting the air to or from the face or blind or dead end and such air-duct shall be so maintained as to minimize any leakage of air and to ensure an adequate supply of air to within four (4) meters of the face or blind.

(2) No auxiliary fan shall be started, stopped, removed, replaced or in any way altered or interfered with, except by or on the authority of an official.

(3) No person shall enter or remain in any place which is dependent for its ventilation on an auxiliary fan, unless such fan is operating efficiently. Whenever the ventilation of any such place has been interrupted, whether by the stoppage of the fan or otherwise, no person shall so enter or remain therein, except for the purpose of restoring the ventilation, unless the place has been examined by a competent person and declared safe.

102. Precautions against fire in ventilation appliances.—The covering of every shaft, cross-cut, winze or raise sealed off or covered for ventilation purposes, every fan drift, duct or casing and every part of a mechanical ventilator or fan within such drift, duct and every air-crossing and ventilation door shall be constructed of fire-proof material.

103. Ventilation plans to be brought up-to-date.—As soon as any alteration is made in the ventilation of a mine, involving the erection or removal of an air crossing or stopping or the alteration in the position or installation of a ventilator below ground, the erection, removal, alteration or installation, as the case may be, shall be shown on the ventilation plan maintained under these rules up to date.

104. Obstructions, interruptions and alterations in ventilation.—(1) No material or debris shall be allowed to accumulate in any level, drive, crosscut or any other part of the working belowground so as to impede the ventilation.

(2) Every roadway and working below ground which is not adequately ventilated shall be fenced or barricaded so as to effectively prevent persons entering the same.

(3) If any person becomes aware of any obstruction in or interference with or deficiency of ventilation in any mine or part thereof, he shall—

(a) if it falls within his power to remedy such obstruction, interference or deficiency, immediately take steps to do so; or

(b) cease all work at that place and shall forthwith inform the mine manager or superior official of such obstruction, interference or deficiency.

(4) Whenever there is any interruption of ventilation by the stoppage or any mechanical ventilator including an auxiliary fan, installed below ground, the official in charge of the mine or part thereof shall immediately take precautionary measures including withdrawal of men, if necessary, against dangers and restore the ventilation in the mine or part thereof.

(5) No person shall alter the general system of ventilation in any mine or part thereof except with the authority of the mine manager:

Provided that, in an emergency, an official in the mine may carry out such alteration, as he may deem necessary, for the safety of persons, but he shall, as soon as possible, inform his superior official or the mine manager about the same in writing.

105. Precautions against gas during de-watering and re-opening.---(1) No disused mine or shaft shall be de-watered except under the constant supervision of a competent person and during such de-watering approved torches shall be exclusively used and there shall also be kept for constantly monitoring the underground air for different gases, approved gas detecting devices.

(2) The first inspection of a mine or part thereof which is re-opened after a discontinuance of mining operations for a period exceeding seven days and of any part of a mine after being de-watered shall be made by a competent person with an approved gas checking devices and during such inspection, no additional light or lamp other than an approved torch shall be used.

(ii) there is no risk of the air which it circulates being contaminated by any substantial quantity of poisonous or noxious gases or dust; and

(b) shall have an air-duct for conducting the air to or from the face or blind or dead end and such air-duct shall be so maintained as to minimize any leakage of air and to ensure an adequate supply of air to within four (4) meters of the face or blind.

(2) No auxiliary fan shall be started, stopped, removed, replaced or in any way altered or interfered with, except by or on the authority of an official.

(3) No person shall enter or remain in any place which is dependent for its ventilation on an auxiliary fan, unless such fan is operating efficiently. Whenever the ventilation of any such place has been interrupted, whether by the stoppage of the fan or otherwise, no person shall so enter or remain therein, except for the purpose of restoring the ventilation, unless the place has been examined by a competent person and declared safe.

102. Precautions against fire in ventilation appliances.---The covering of every shaft, cross-cut, winze or raise sealed off or covered for ventilation purposes, every fan drift, duct or casing and every part of a mechanical ventilator or fan within such drift, duct and every air-crossing and ventilation door shall be constructed of fire-proof material.

103. Ventilation plans to be brought up-to-date.---As soon as any alteration is made in the ventilation of a mine, involving the erection or removal of an air crossing or stopping or the alteration in the position or installation of a ventilator below ground, the erection, removal, alteration or installation, as the case may be, shall be shown on the ventilation plan maintained under these rules up to date.

104. Obstructions, interruptions and alterations in ventilation.---(1) No material or debris shall be allowed to accumulate in any level, drive, crosscut or any other part of the working belowground so as to impede the ventilation.

(7) In any part of a mine where the Chief Inspector or the Inspector concerned may require by an order in writing, all unused workings which have not been sealed off, shall once at least in every seven days be inspected by a competent person for oxygen deficiency or noxious gases. A report of every such inspection shall be recorded in a bound-paged book kept for the purpose and shall be signed and dated by the person who made the inspection.

107. **Determination of environmental conditions.**---(1) In every mine having workings belowground extending to a depth of more than fifty (50) meters from the surface, determinations shall, once at least in every thirty days be made of temperature, humidity and such other environmental conditions as the Chief Inspector or the Inspector concerned may by an order in writing stipulate, at the blind or dead end of every drive and at such other points as the Chief Inspector or the Inspector concerned may specify.

(2) In case of underground working, maximum temperature at any work place shall not exceed thirty two (32) degree centigrade. If temperature exceeds, the mine manager shall provide longer breaks and reduce working time to protect workers health.

108. **Appointment of ventilation officer.**---In the case of any mine having extensive workings below ground, if the Chief Inspector by an order in writing so requires, the mine manager shall be assisted by a ventilation officer, holding such qualification as the Chief Inspector may specify in his order, who shall be responsible for supervising the maintenance of the ventilation system of the mine in accordance with the provisions of these rules.

109. **Person to carry light in underground part of a mine.**---In any underground part of a mine where adequate stationary lights are not in use, every person shall carry alight.

110. **Light to be placed in charge of some person.**---No person shall leave or place a light in any underground part of a mine unless and until he has placed it in charge of some person remaining therein.

CHAPTER-XII EXPLOSIVES AND SHOT FIRING

111. Type of explosives to be used in mines.---(1) No explosive shall be used in a mine except that provided by the owner, agent or mine manager under the license issued by the competent authority.

(2) The explosives provided for use in the mine shall be of good quality and as far as can be practically known, in good condition, and only detonators of one strength and of sufficient power for every class of explosives used shall be kept for use in the same mine.

112. Gunpowder or explosives to be issued in the form of cartridges.---(1) No gunpowder or any other explosives except safety fuses and detonators shall be issued for use in blasting operations in a mine or used in a mine except in the form of cartridges.

(2) The Preparation of cartridges from loose gunpowder, the drying of gunpowder and the reconstruction of damp cartridge shall be carried out only by a competent person or persons appointed in writing by the mine manager for the purpose and only in accordance with the conditions laid down under the Khyber Pakhtunkhwa Explosives Act, 2013 (Khyber Pakhtunkhwa Act No. XXV of 2013) and rules or any order made thereunder in a place approved by the Chief Inspector or Inspector of Explosives.

113. Storage of explosives.---(1) No owner, agent or mine manager shall store, or knowingly allow any other person to store, within the premises of a mine any explosives otherwise than in accordance with the provisions laid down under these rules or in accordance with the order made by the Chief Inspector in writing.

(2) Explosives shall not be taken into or kept in a dwelling house, but only in a properly constructed magazine near to working site at safe permissible distance.

(3) Explosives shall not be stored underground in a mine except with the approval of the Chief Inspector or the Inspector concerned in writing, and in a magazine duly approved by the Chief Inspector of Explosives.

(4) Every magazine where explosives are stored shall be in charge of a competent person, appointed by the mine manager, who shall be responsible for the proper receipt, storage and issue of explosives.

(5) Explosives shall not be issued from the magazine unless they are required for immediate use. If any explosives are returned to the magazine, they shall be re-issued before fresh stock is used.

(6) Explosives shall be issued only to the competent persons appointed by the mine manager and no unauthorized person shall have explosives in his possession. The names of such competent persons shall be entered in a bound-paged book kept for the purpose.

(7) The person in charge of the magazine shall maintain, in a bound-paged book kept for the purpose, a clear and accurate record of explosives issued to each competent person and a similar record of explosives returned to the magazine.

114. Cases or containers for carrying explosives.—(1) No explosive shall be issued from the magazine or taken into any mine except in a case or container of substantial construction and securely locked.

(2) Cases or containers made of iron or steel shall be heavily galvanized and no case or container provided for carrying detonators shall be constructed of metal or other conductive material.

(3) No detonator shall be kept in a case or container which contains other explosives, materials or tools and two or more types of detonators shall not be kept in the same case or container.

(4) No detonator shall be inserted into a priming cartridge until immediately before it is used:

Provided that in the case of a wet working or in a sinking shaft or winze or raise, primer cartridge may be prepared at the nearest convenient dry place adjacent to the working.

(5) No detonator shall be taken out from a case or container unless it is required for immediate use.

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(6) No case or container shall contain more than twenty five (25) kilograms of explosives and no person shall have in his possession at one time in any place more than one such case or container:

Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit the possession of a larger quantity of explosives in a single case or container or the use, at one time in one place, of more than one such case or container.

(7) Every case or container shall be numbered and as far as practicable, the same case or container shall be issued to the same competent person, as the case may be, everyday.

(8) The supervision and possession of every case or container shall be by the blaster or shot firer throughout his shift.

115. Transport of explosives.---(1) While explosives are lowered or raised in a shaft, raise or winze, a distinguishing mark shall be attached to the cage, skip or bucket containing the explosive or the person in charge of explosives shall travel in the same cage, skip or bucket.

(2) Every cage, skip or bucket containing explosives shall be gently lowered or raised. It shall be the duty of the bellman to adequately warn the winding engineman before the cage, skip or bucket is set in motion.

(3) Where explosives are being carried on a ladder, every case or container shall be securely fastened to the person carrying it.

(4) No person other than a blaster or shot firer shall carry any priming cartridge into a shaft, raise or winze which is in the course of being sunk. No such cartridge shall be so carried except in a thick felt bag or other container sufficient to protect it from shock.

(5) In case of surface mining, explosive shall be transported in an approved van where separate compartment are available for cartridges and detonators.

116. Reserve stations.---(1) No case or container containing explosives shall be left or kept below ground except in a place approved by the mine manager for the purpose and so situated that it is not frequented by work persons.

(2) Every such place mentioned in sub-rule (1), shall be kept clean, safe and adequately fenced and legibly marked 'RESERVE STATION'.

117. Shot firing.—(1) The preparation of charges and the charging and stemming of holes shall be carried out by a blaster or shot firer or by a competent person under the personal supervision of blaster or shot firer. The blaster or shot firer shall fire the shots himself.

(2) No person shall be appointed to be a blaster or shot firer unless he is the holder of Blaster's or Shot firer's Certificate or duly authorized by the mine manager in writing to be competent person for the said job.

(3) If five or more persons are employed belowground at any one time in any mine or in any part thereof under the charge of a competent person, such person shall not perform the duties of a blaster or shot firer.

(4) No person, whose wages or salary is not paid by the owner, shall be appointed to perform the duties of a blaster or shot firer. He shall not have any financial interest in getting a mineral.

(5) The mine manager shall fix, from time to time, the maximum number of shots that a blaster or shot firer may fire in any one shift and such number shall not, unless the Chief Inspector or the Inspector concerned by an order in writing and subject to such conditions as he may specify therein otherwise permits, exceed eighty in case they are fired electrically or by means of an igniter cord and fifty in other cases, and shall be based upon—

- (i) the time normally required to prepare and fire a shot in accordance with the provisions of these rules;
- (ii) the time required for that blaster/shot firer to move between places where shots are fired;
- (iii) the assistance, if any, available to him in the performance of his said duties; and
- (iv) any other duties assigned to him, whether statutory or otherwise:

Provided that the Chief Inspector or the Inspector concerned may, by an order in writing an subject to such conditions as he may specify therein, permit the mine manager to fix the maximum number of shots to be fired by a blaster/shot firer differently from the limits specified in this sub-rule.

(6) The number of detonators issued to, and in the possession of a blaster or shot firer during his shift shall not exceed the maximum number of shots that he is permitted to fire under sub-rule (5).

118. Shot firing tools.---(1) Every blaster or shot firer on duty shall be provided with--

- (a) a suitable electric lamp or torch;
- (b) a tool, made entirely of wood, suitable for charging and stemming shot holes;
- (c) a scraper made of brass or wood suitable for cleaning out shot holes;
- (d) where fuses are used, a knife for cutting off fuses, unless machine escaped fuses are provided, also a pair of suitable crimpers for crimping detonators; and
- (e) where detonators are used, a pricker made of wood or a non-ferrous metal for priming cartridges.

(2) No tool or appliance other than that provided in sub-rule (1), shall be used by a blaster or shot firer.

119. General precautions with respect to Shot firing.---(1) No drill shall be used for boring a shot hole unless it allows a clearance of at least 0.3 centimeter over the diameter of the cartridge of explosive which it is intended to use.

(2) No shot hole shall be charged before it is thoroughly cleaned.

(3) Before any shot hole is charged, the direction of the hole shall, where practicable, be distinctly marked on the roof or other convenient place.

(4) Unless otherwise permitted by the Chief Inspector by an order in writing and subject to such conditions as he may specify therein, the charge in any shot hole shall consist of one or more complete cartridges of the same diameter and the same type of explosive.

(5) The blaster or shot firer shall, to the best of his judgment, ensure that no charge in a shot hole is over-charged or under-charged, having regard to the task to be performed.

(6) No shot hole shall be fired by a fuse less than 1.2 meters in length.

(7) Every shot hole shall be stemmed with suitable non-inflammable stemming so as to prevent the shot from blowing out. Only sand loosely filled in, or soft clay lightly pressed home or a compact but not hard mixture of sand and clay or water shall be used as stemming.

(8) In charging or stemming a shot hole, no metallic tool, scraper or rod shall be used.

(9) No explosive shall be forcibly pressed into a hole of insufficient size.

(10) No shot shall be fired except in a properly drilled, charged and stemmed shot hole.

(11) All surplus explosives shall be removed from the vicinity of a shot hole before a light is brought near it for the purpose of lighting the fuse.

(12) As far as practicable, a shot shall be fired by the same blaster who charged it.

(13) In any mine in which explosives other than gunpowder are used, every shot shall, if so required by the Chief Inspector or the Inspector concerned, be fired electrically.

(14) Not more than ten (10) holes shall be fired in one round unless they are fired electrically or by means of an igniter cord.

(15) No shot hole shall be charged except those which are to be fired in that round and all shot holes which have been charged shall be fired in one round.

(16) Where a large number of shots has to be fired, a shot firing shall, as far as practicable, be carried out between shifts.

(17) No person shall remove any stemming otherwise than by means of water or an approved device or pull out any detonator lead or remove any explosive from any charged shot hole.

(18) No person, whilst handling explosives or engaged or assisting in the preparation of charges or in the charging of holes, shall smoke or carry or use a light other than an enclosed light, electric torch or lamp:

Provided that nothing in this sub-rule shall be deemed to prohibit the use of an open light for lighting fuses.

(19) No person shall take any light other than an enclosed light, electric torch into any explosive magazine.

(20) Any person finding any explosives in or about a mine shall deposit the same in the magazine. Every such occurrence shall be brought to the notice of the mine manager in writing.

120. Electric shot firing.—(1) Where shots are fired electrically, the following provisions shall have effect, namely:

- (a) no shot shall be fired except by means of a suitable shot firing apparatus and the number of shots fired at any one time by the apparatus shall not exceed the number for which it is designed;
- (b) every electrical shot firing apparatus shall be so constructed and used that-
 - (i) it can only be operated by a removable handle or plug. This handle or plug shall not be placed in position until a shot is about to be fired and shall be removed as soon as a shot has been fired; and
 - (ii) the firing circuit is made broken either automatically or by means of a push-buttons witch;

- (c) no apparatus shall be used which is defective and every apparatus shall once at least in every three months, be cleaned and thoroughly overhauled by a competent person;
 - (d) if the apparatus fails to fire all the shots in a properly connected circuit, the blaster or shot firer shall return the apparatus to the mine manger, as soon as possible, and it shall not be used again unless it has been tested on the surface and found to be in safe working order; and
 - (e) the result of every overhaul test or repair as provided in clause (c), shall be recorded in a bound-paged book kept for the purpose and shall be signed and dated by the person making the overhaul, test or repair.
- (2) No current from a signaling, lighting or power circuit shall be used for firing shots.
- (3) The blaster or shot firer shall-
- (a) retain the key of the firing apparatus in his possession throughout his shift;
 - (b) use a well-insulated cable of sufficient length to permit him to take proper shelter, and in no case, shall this cable be less than twenty (20) meters in length;
 - (c) before coupling the cable to the firing apparatus, couple up the cable himself to the detonator leads;
 - (d) take care to prevent the cable from coming into contact with any power or lighting cable or other electrical apparatus;
 - (e) take adequate precautions to protect electrical conductors and apparatus from injury;
 - (f) himself couple the cable to the firing apparatus and before doing so, see that all persons in the vicinity have taken proper shelter as provided; and
 - (g) after firing the shots and before entering the place of firing, disconnect the cable from the firing apparatus.

- (4) Where more than one shot are to be fired at the same time-
- (a) care shall be taken that all connections are properly made;
 - (b) all shots, if fired belowground, shall be connected in series;
 - (c) the circuit shall be tested either for electrical resistance or for continuity before connecting it to the firing apparatus. Such a test shall be made with an apparatus specifically designed for the purpose; and
 - (d) the cable to the shot firing apparatus shall be connected last.

121. Taking shelter etc.---(1) The blaster or shot firer shall, before a shot is charged, stemmed or fired, see that all persons other than his assistants, if any, in the vicinity, have taken proper shelter and he shall also take suitable steps to prevent any person approaching the shot and shall himself take adequate shelter, along with his assistants, if any, before firing the shots.

(2) In the case of an opencast working the blaster or shot firer shall not charge or fire a shot-

- (a) unless he has taken the precautions laid down in sub-rule (1);
- (b) unless sufficient warning by efficient signals or other means approved by the mine manager, is given over the entire area falling within a radius of three hundred (300) meters from the place of firing (hereinafter referred to as the danger zone) and also he has ensured that all persons or animals within such area have taken proper shelter; and
- (c) where any part of a public road or railway lies within the danger zone, unless two persons are posted, one in either direction at the two extreme points of such road or railway which fall within the danger zone who have by an efficient system of telephonic communication or hooter or loudspeakers or other means approved by the Chief Inspector intimated clearance of traffic to the blaster and have also warned the passersby and whenever possible the vehicle also, if any, which have passed by such road or railway:

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Provided that if blasting is done in such a manner approved in writing, by the Chief Inspector that the flying rocks from blasting cannot project beyond a distance of ten meters from the place of firing, the provisions of clauses (b) and (c) need not be complied with,

(3) In the case of a surface working, where any permanent building or structure of permanent nature not belonging to the owner, lies within the danger zone, the aggregate maximum charge in all the holes fired at one time shall not exceed two kilograms unless permitted in writing by the Chief Inspector and subject to such conditions as he may specify therein:

Provided that if the shortest distance from the place of firing to any part of such building or structure is less than three hundred (300) meters irrespective of the amount of the charge, no blasting shall be done except with the permission in writing of the Chief Inspector or the Inspector concerned and subject to such conditions as he may specify therein.

(4) Notwithstanding anything contained in sub-rule (3), the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, exempt any mine or part thereof from the operation of all or any of the provisions of sub-rule (1) or (2), as the case may be, on the ground that the observance of its provisions is not necessary or reasonably practicable on account of the special conditions existing thereat.

(5) Where the workings, either above or below ground, offer insufficient protection against flying fragments or missiles, adequate shelter or other protection shall be provided.

(6) When two working places belowground have approached within ten meters of each other, the blaster/shot firer shall not fire any shot in any one of the said workings unless all persons have been withdrawn from the other working place and prevent persons inadvertently coming in direct line of the shot.

(7) No shot shall be stemmed or fired by any person who does not hold blaster or shot firer certificate or declare in writing as competent person in writing by the mine manager for the said job.

(8) Where more shots than one are charged for firing, delay-action detonator shall be used or shots fired simultaneously if previous permission in writing of the Chief Inspector and subject to such conditions as he may specify therein, has been obtained.

122. Inspections after shot firing.---(1) After a shot has been fired, no person other than the blaster or shot firer or any other competent person appointed for the purpose by the mine manager shall enter, or allow any other person to enter the place until the area is free from dust, smoke or fumes.

(2) The blaster or shot firer or other competent person shall, before any other person enters the place, make a careful examination and with his assistants, if any, make the place safe.

(3) No other person shall enter the place and where guards have been posted, they shall not be withdrawn until the examination has been made and the place has been declared to be safe in all respect.

(4) In the case of surface workings, after shots have been fired, an all-clear signal shall be given except in the case of a misfire.

(5) After shots have been fired, all persons engaged in clearing mineral, rock or debris shall look for unexploded cartridges and detonators. If such a cartridge and detonator is found, it shall be removed and shall, as soon as possible, be handed over to a blaster or shot firer or other official.

123. Misfires.---(1) The number of shots which are to be exploded shall, unless shots are fired electrically or by means of an igniter cord, be counted by the blaster or shot firer and another competent person authorized for the purpose and unless it is certain that all the shots have been exploded, no person shall re-enter or be permitted to re-enter the place until thirty minutes after the firing of shots:

Provided that where shots are fired electrically, this interval may be reduced to not less than ten minutes after the source of electricity has been disconnected from the cable.

(2) In the event of a misfire, the entrance or entrances to the working place shall be barricaded or fenced so as to prevent inadvertent access and no work other than that of locating or relieving the misfire shall be done therein until the misfire has been located and relieved. In surface workings, it shall be sufficient to mark the place of the misfire with a red flag.

(3) In the event of a misfire, the tamping may be sludge out with compressed air or water under pressure or removed by such other means as may be approved in writing by the Chief Inspector and subject to such conditions as he may specify therein. The hole shall thereafter be reprimed and fired.

(4) Except where the misfire is due to use of faulty cable or a faulty connection, and the shot is fired as soon as practicable after the defect is remedied, or where a shot has been re-primed and fired under sub-rule (3), another shot shall be fired in a relieving hole which shall be so placed and drilled in such a direction that at no point shall it be nearer than thirty (30) centimeters from the misfired hole and the new hole shall be bored in the presence of a blaster or shot firer, preferably the same person who fired the shot.

(5) After a relieving shot has been fired, a careful search for cartridges and detonators, if any, shall be made in the presence of the blaster or shot firer or other competent person amongst the material brought down by the shot:

Provided that in the case of workings below ground if such cartridge or detonator is not recovered, the tubs into which the material is loaded shall be marked and a further search made on the surface. As far as practicable the search for the detonators and cartridges and the loading of any ore, stone or debris which may contain a detonator, shall be carried out without the aid of tools.

(6) If a misfired hole is not dislodged by a relieving shot, the procedure laid down in sub-rule (5), shall be repeated. A misfired hole which cannot be dealt with in the manner provided in sub-rule (5), shall be securely plugged with a wooden plug and no person other than a blaster or shot firer or a mining official or a person authorized for the purpose shall remove or attempt to remove such plug.

(7) When a misfired shot is not found or when a misfired shot is not relieved or re-blasted, the blaster or shot firer shall, before leaving the mine, give information of the failure to such official as may relieve or take over charge from him. He shall also record in a bound-paged book kept for the purpose, a report on every misfire, whether suspected, and whether relieved or not relieved. It shall be the responsibility of the relieving blaster or shot firer or official also to sign the report and later to record in the said book the action taken for reliving the misfired shot hole.

(8) The blaster or shot firer of the next shifts shall locate and re-blast the misfired hole but if after a thorough examination of the place where the misfire was reported to have occurred, the blaster or shot firer or other competent person appointed for the purpose by the mine manger is satisfied that no misfire had actually occurred, they may permit drilling in the place.

124. Precaution in case of misfire.---(1) Before the commencement of drilling in any working place, the competent person in charge of the place shall see that all looser rock is removed from the face and the area lying within a radius of two meters of the proposed shot hole is thoroughly cleaned or washed down with water and carefully examined for the presence of misfires:

Provided that where special conditions exists, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, grant a relaxation from these provisions.

(2) If any socket is found, it shall be dealt with in the manner provided in this Chapter.

(3) No person shall bore out a hole that has once been charged, or attempt to withdraw a charge either before firing or after a misfire or deepen or tamper with any empty hole left after shot firing.

125. Duties of blaster or shot firer at the end of his shift.---Immediately after the end of his shift, the blaster or shot firer shall-

- (a) return all unused explosive to the magazine; and
- (b) record, in a bound-paged book kept for the purpose, the quantity of explosive taken, used and returned, the places where shots were fired and the number of shots fired by him and misfires, if any. Every such entry shall be signed and dated by him.

CHAPTER-XII
PRECAUTIONS AGAINST DUST

126. Steps to minimize and remove generation of dust.---The owner, agent or manager of every mine shall take such steps as are necessary for minimizing generation, removal and suppression of dust which enters the air at any work place below ground or on surface and for ensuring that the exposure of workers to irrespirable dust is limited to an extent that is reasonably practicable but in any case not exceeding the limits that are harmful to the health of persons.

127. Place to be considered harmless in certain cases.---For the purpose of rule 128, a place shall not be deemed to be in a harmless state for person to work or pass or be therein, if during the eight hours time, the weighted average concentration of airborne respirable dust in milligrams per cubic meter of air sampled by approved dust sampler of a type approved by and determined in accordance with the procedure as specified by the Chief Inspector by a general or special order.

128. Sampling of air in mine.---(1) The owner, agent or manger of every mine shall, once at least every six months thereafter or whenever the Chief Inspector or the Inspector concerned so requires by an order in writing, cause the air at every work place where airborne dust is generated to be sampled and the concentration of respirable dust therein determined:

Provided that, if any measurement at any workplace shows the concentration in excess of fifty percent or seventy five percent of the allowable concentration (hereinafter referred to as 'permissible limit') the subsequent measurements shall be carried on at intervals not exceeding four months:

Provided further that, such measurements shall also be carried on immediately upon the commissioning of any plant, equipment or machinery or upon the introduction of any new work practice or upon any alteration therein that is likely to bring about any substantial change in the level of airborne respirable dust.

(2) The location, frequency, timing, duration and pattern of sampling shall be such that the samples drawn are, as far as practicable, truly representative of the levels of dust exposure of work persons and the sampling shall include--

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- (a) 'static monitoring' to identify sources of dust emission and levels of dust concentration in working environment; and
 - (b) 'personal monitoring' of air reaching the breathing zone of work persons. The sampling shall be duly supplemented by short-term sampling during peak-emissions.
- (3) Samples shall be taken-
- (a) by a person who has been specially trained for the purpose; and
 - (b) by the sampling equipment and accessories that have been checked to ensure correct maintenance and efficient operation thereof and examined, tested and calibrated on a date which is not earlier than one year.
- (4) Respirable dust content of the samples and quartz content shall be determined, as soon as practicable, at a properly equipped laboratory approved in writing by the Chief Inspector in that behalf.
- (5) All result of measurements of airborne respirable dust and all other relevant particulars shall be systematically recorded within fifteen days of the date of collection of samples, in abound-paged book kept for the purpose. Every entry in the book aforesaid shall be countersigned and dated by the mine manager within twenty four hours after such recording.
129. Ceasing of operations causing excessive dust.--(1) When the dust monitoring results have established that the permissible limit of dust concentration being exceeded at any place, the relevant operation or operations causing excessive dust shall cease.
- (2) The operation or operations shall not be resumed and allowed to be carried on until improvements have been made in the prevention and suppression of dust and fresh sampling carried out immediately on resumption of the said operation or operations has established that such improvements have reduced the dust concentration below the 'permissible limit' :

Provided that if the dust prevention, removal and suppression device of any machinery or equipment fails to operate efficiently, the operation of the said machinery or equipment shall likewise cease and shall not be resumed until the defect therein has been rectified:

Provided further that, purely as a contingency measure or as a secondary means of protection in a work situation removal or suppression, compliance with the 'permissible limit' of dust exposure may be achieved by job rotation and failing which by the use of a respiratory equipment of a type specified from time to time by the Chief Inspector by a general or special order in writing in this behalf.

130. Duties of owner, agent or mine manager to provide dust respirators.---

-(1) The owner, agent or mine manager where need of dust respirators might arise shall ensure that no person goes into or works or is allowed to go into or work at any place where the respirable dust concentration is in excess of the 'permissible limit' unless he wears a suitable dust respirator; and

(2) The owner, agent or mine manager shall provide--

- (i) sufficient dust respirators of appropriate design at no costs to concerned work persons for their use;
- (ii) for the dust respirators to be regularly cleaned, disinfected and maintained in efficient working order; and
- (iii) for the proper fitting of and for thorough training of the concerned workers in the need for and correct use of respirators.

131. Prevention of dust and propagation of airborne dust.---(1) In order to prevent the liberation and accumulation of dust and the propagation of airborne dust, the following provisions of this rule shall have effect.

(2) Dust shall be suppressed as close as possible to its source of formation.

(3) During any operation of drilling or boring on surface or belowground-

- (a) the production of dust shall be reduced by using bits which are sharp and of proper shape, by keeping suitable pressure on the bits and by keeping the holes clear of the cuttings; and
- (b) a jet of water shall be directed on to the cutting edge to wet the cuttings or other equally efficient device approved by the Chief Inspector shall be provided and kept in operation throughout the drilling or boring operation to prevent the atmosphere being charged with dust. Where pneumatic drilling is performed, water shall be turned on before turning on compressed air to the drill. When, however, drilling is done by hand, it shall be sufficient if holes are kept constantly moist during such drilling.

(4) Roadways on surface or below ground where mobile mining machinery apply shall be regularly wetted or shall be effectively treated with some other equally efficient agent to reduce dust being raised in the atmosphere to a minimum.

(5) No plant for the screening or sorting of minerals or ores and as far as practicable, no heap of clay, sand, mortar or other dry and fine material shall be placed within thirty (30) meters of the top of any down-cast shaft or other intake airway nor shall any such material be so handled as to make it air-borne and drawn into such shaft or airway.

(6) In every working belowground—

- (a) no machinery or equipment which is likely to emit dust in excess of 'permissible limit' shall be operated unless it is equipped with a suitable dust-prevention and suppression device and unless such device is operating efficiently;
- (b) work places and rock walls in the vicinity thereof shall be, unless naturally wet throughout regularly washed down to prevent accumulation of dust and shall be kept thoroughly wetted during work shifts;

- (c) a current of air sufficient to clear away the dust emitted by any machinery or operation and to dilute the dust concentration below the 'permissible limit' shall be maintained by means of general ventilation and, if necessary, by local ventilation, so however that, as far as practicable, the velocity of air in any roadway or workplace shall not be such as to raise dust in the atmosphere;
- (d) after blasting, working places shall not be entered, unless sufficient time has elapsed for dust, smoke and fumes to be cleared by a current of air and the broken ore or rock shall not be moved unless it has been thoroughly wetted with water;
- (e) vehicles, tubs and conveyors used for transport of mineral or ores shall be maintained in good condition so as to minimize spillage or leakage and chutes, ore passes, bins, tipplers, conveyor, discharge points and skip loading and unloading installations shall be so controlled as to reduce the formation of dust to the minimum. Such material shall be also thoroughly wetted with water unless it is already wet or other effective means of dust suppression are used; and
- (f) unless, owing to special difficulties, exempted in writing by the Chief Inspector in that behalf and subject to such conditions as he might specify therein, water in pipes is of sufficient quantity and under adequate pressure and independent of any pumping system shall be provided and maintained so as to get maximum efficiency in the laying of dust.

(7) No process of crushing, breaking, disintegrating, opening, grinding, screening or sieving of ores, minerals or stone or any operation incidental thereto shall be carried out at any mine unless appropriate and effective dust control measures, such as enclosure, exhaust ventilation and dust collection are designed, provided, maintained and used.

(8) The exhausted air, below ground or on surface, which contains dust in excess of the 'permissible limit' shall be efficiently diluted and, if necessary, filtered so as to reduce the concentration of respirable dust therein below ten percent of the 'permissible limit' before being re-circulated into working places or before emission into atmosphere.

(9) Every device used for the prevention, removal and suppression of dust produced by any machinery, equipment or process as also for the filtering of the exhausted air and every dust respirator shall be inspected once at least in every seven days and shall be thoroughly examined and tested at least once in every period of six months and reports of the results of every such inspection, examination and test shall be recorded in the register maintained for the purpose.

132. Scheme for airborne dust in mine.---The mine manager, where airborne dust is generated, shall formulate and implement a scheme specifying-

- (a) the location, frequency, timing duration and pattern of sampling;
- (b) the instruments and accessories to be used for sampling;
- (c) the laboratory at which respirable dust content of samples and quartz content shall be determined;
- (d) the format in which the results of measurements of dust concentration and other particulars have to be recorded;
- (e) the organization for dust monitoring and for the examination and maintenance of dust prevention and suppression measures and dusts respirators; and
- (f) the manner of making all persons concerned with the implementation of the dust control measures fully conversant with the nature of work to be performed by each in that behalf.

133. Variation in the scheme for airborne dust.—The Chief Inspector may, where special conditions exist, permit or require by an order in writing and subject to such conditions as he may specify therein, any variation in the scheme provided in rule 132.

134. Power to remove doubt.—If any doubt arises as to any matter referred to in this rules, it shall be referred to the Chief Inspector for decision.

135. Repeal and savings.—(1) The Metalliferous Mines Regulations, 1926 are hereby repealed in their application to the extent of the Province.

(2) Notwithstanding, the aforesaid repeal, anything done, action taken, orders issued under the repealed regulations, so far as is not inconsistent with the provisions of these rules, be deemed to have been done, taken or issued under these rules and shall have effect accordingly.

(3) Any documents referring to the repealed regulations and rules shall be construed as referring to the corresponding provision of these rules.

SECRETARY TO
GOVERNMENT OF THE KHYBER PAKHTUNKHWA
MINERALS DEVELOPMENT
DEPARTMENT