

ARYAN SCHOOL OF ENGINEERING & TECHNOLOGY

BARAKUDA,PANCHAGAON,BHUBANESWAR,KHORDHA-752050



LECTURE NOTE

SUBJECT NAME- MINE LEGISLATION AND GENERAL SAFETY -I

BRANCH – MINING ENGINEERING

SEMESTER – 5TH SEM

ACADEMIC SESSION - 2022-23

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Th. 3. MINE LEGISLATION & GENERAL SAFETY-I

| Name of the Course : Diploma in Mining Engineering | | | |
|--|---------|--------------------------|-------|
| Course code: | | Semester | 5th |
| Total Periods: | 60 | Examination | 3 hrs |
| Theory Periods: | 4P/week | Internal Assessment | 20 |
| Maximum Marks: | 100 | End Semester Examination | 80 |

RATIONALE

Since Mining operations involve frequent accidents, it is very important for a mining engineer to be thoroughly conversant with various acts & rules framed for providing safety to workers.

OBJECTIVES

On completion of the course, students will be able to :

- Describe various aspects of Mines Act 1952.
- Describe various aspects of Mines Rule 1955.
- Describe various aspects of Coal Mines Regulations 2017.
- Describe various aspects of Mines Rescue Rules 1985.
- Describe various aspects of Indian Explosive Rules 2008.
- Describe various aspects of Central Electricity Authority 2010.

Topic- wise distribution of periods

| CHAPTER | TOPIC | PERIODS |
|---------|------------------------------------|---------|
| 1 | Mines Act 1952 | 14 |
| 2 | Mines Rules 1955 | 10 |
| 3 | Coal Mines Regulations 2017 | 18 |
| 4 | Mine Rescue Rules 1985 | 5 |
| 5 | Indian Explosive Rule 2008 | 7 |
| 6 | Central Electricity Authority 2010 | 6 |
| | Total | 60 |

COURSE CONTENTS

1. **Mines Act 1952**
 - Discuss various provisions of Mines Act 1952.
2. **Mines Rules 1955**
 - Discuss various provisions of Mines Rule 1955.
3. **Coal Mines Regulation 2017**
 - Discuss various Provisions of C.M.R. 2017.
4. **Mines Rescue Rules 1985**
 - Discuss various provisions of Mines Rescue Rules 1985.
5. **Indian Explosive Rules 2008**
 - Discuss various provisions of Indian Explosive Rules 2008.
6. **Central Electricity Authority 2010**
 - Discuss various provisions of Central Electricity Authority 2010.

SYLLABUS COVERAGE UP TO I.A

Chapter 1,2

| Learning Resources | | |
|--------------------|--------------------------------------|-----------------|
| Sl. No. | Title of the Book | Name of Authors |
| 1 | Mines Act - 1952 | |
| 2 | Mines Rules - 1955 | |
| 3 | Coal Mine Regulations - 2017 | |
| 4 | Mines Rescue Rules - 1985 | |
| 5 | Indian Explosive Rules - 2008 | |
| 6 | Central Electricity Authority - 2010 | |

COAL MINE REGULATION, 2017.

Definitions

In these regulations, unless the context otherwise requires

- (1) "abandoned working" means such workings as has been abandoned with no intention of working in future.
- (2) "Abandoned mine methane (AMM)" means a natural gas recovered from abandoned coal mines or part thereof.
- (3) "Act" mean Mines Act 1952 (35 of 1952)
- (4) "Approved safety lamp" & "Approved Electric Torch" means respectively a safety lamp or an electric torch, manufactured by such firms & of such type as the chief inspector may, from time to time, specify by a general or special order.
- (5) "Assistant manager" means a person possessing a manager's certificate appointed in writing by the owner, agent or manager to assist the manager in the management, control, supervision and direction of the mine or part thereof, and who holds the rank immediately below the manager & superior to an overman and a sirdar.
- (6) "auxillary fan" means a forcing fan or an exhausting fan used belowground wholly or mainly for ventilating one or more faces forming part of a ventilating district

- (7) "average output" of any mine, means the avg. output per month during the preceding financial year of the total output from all workings within the specified mine boundaries
- (8) "banesman" means a person appointed to supervise - tend the lowering & raising of persons, tools and materials and to transmit signals at the top of a shaft or incline.
- (9) "booster fan" means a mechanical ventilator used below ground for boosting the whole current of air passing along the intake or return airway of a mine or ventilating district.
- (10) "coal" includes anthracite, bituminous, lignite, peat and any other form of carbonaceous matter sold or marketed as coal.
- (11) "coal mine methane" (CMM) means a natural gas recovered from a coal mine or part thereof.
- (12) "committee" means a committee appointed under section 12 of the Act.
- (13) "competent person" in relation to any work or any machinery, plant or equipment means a person who has ~~attended~~ attained the age of twenty years & who has been duly appointed in writing by the manager as a person competent to supervise or perform that work, or to supervise the operation of that machinery, plant or equipment, and who is responsible for the duties assigned to him, and includes a shift firer.

- (14) "contractor" means an individual, association of individuals, company, firm, local authority or local body who provides for the services or operations in a mine on contract basis and includes a sub-contractor.
- (15) "deep hole drilling & blasting" means drill holes more than 3m in depth & used for blasting in an opencast mining operations
- (16) "designer" means an individual, association of individuals, company or institution who designs a coal mining system, method of coal mining, machinery, plant, equipment, appliance or substances for use in coal mines.
- (17) "discontinued workings" means such workings in a mine as have been discontinued for any reason and are inaccessible or rendered inaccessible but are likely to be worked again.
- (18) "District Magistrate" in relation to any mine, means the District Magistrate or the Deputy Commissioner, as the case may be, who is vested with the executive powers of maintaining law and order in the revenue district in which the mine is situated.

Provided that in the case of a mine, which is situated partly in one district and partly in another, the District Magistrate for the purpose of these regulations shall be the District Magistrate authorized in this behalf by the central government.

- (19) "disused working" means such workings in a mine where work has been temporarily stopped, but which are accessible and include unused workings.
- (20) "explosive" shall have the same meaning as is assigned to it in the explosive act, 1884 (4 of 1884)
- (21). "face" means the moving front of any working place or the inbye end of any gallery, roadway or drift.
- (22) "fiery seam" means a seam in which a fire or spontaneous heating exists in the working belowground or in open cast workings lying within the precincts of a mine.
- (23) "financial year" means a period of 12 months from the 1st day of April to the last day of March of the successive year.
- (24) "flame proof enclosure" shall have the same meaning as defined under the central electricity authority, Regulation 2010.
- (25) "form" means a form as may be specified by an order or instruction by the chief inspector under these regulations.
- (26) "gas" includes fume or vapour.
- (27) "gassy seam of the first degree" means a coal seam or part thereof lying within the precincts of a mine not being an open cast working whether or not

inflammable gas is actually detected, in such general body of air does not exceed 0.1 and the rate of emission of such gas does not exceed one cubic meter per tonne of coal produced.

(28) "gassy seam of the second degree" means a coal seam or part thereof lying within the precincts of a mine not being an open cast working in which the percentage of inflammable gas in the general body of air at any place in the workings of the seam is more than 0.1 or the rate of emission of inflammable gas per tonne of coal produced exceeds 1 m^3 but does not exceed 10 m^3 .

(29) "gassy seam of the third degree" means a coal seam or part thereof lying within the precincts of a mine not being an open cast working in which the rate of emission of inflammable gas per tonne of coal produced exceeds 10 m^3 .

(30) "general body of air" means the general atmosphere in a coal seam and includes the atmosphere in the roof cavities, but does not include the general atmosphere in the sealed off area or in any borehole drilled in coal or in the adjacent strata.

(31) "goaf" means any part of workings below ground where from a pillar or part thereof, or in the case of Longwall workings, coal has been extracted but which is not a working place.

(32) "haul road" means any passage or road, which is maintained and used in connection with the working of opencast mines for plying of machinery within the precincts of a mine.

(33) "Heavy Earth Moving Machinery (HEMM)" means machinery used in opencast mines for digging, drilling, dredging, hydraulic mining, ripping, dozing, grading, excavating, loading or transporting minerals or overburden.

(34) "Incline" means an incline passage or road either on the surface or below ground.

(35) "Intrinsically safe" shall have the same meaning as defined under the Central Electricity Authority, Regulation 2010.

(36) "inset" means a landing platform in a shaft, and includes an excavation therefrom between the top and bottom of the shaft.

(37) "manager" means a manager appointed under regulation 27.

(38) "material" includes coal, stone, debris or any other material.

(39) "machinery" means

- (a) any locomotive or any stationary or portable engine, air compressor, boiler or steam apparatus which is, or
- (b) any such equipment used for cutting, drilling, loading & transporting of material which is, or
- (c) any such apparatus, appliance or combination of appliances if any power developed, stored, transmitted, converted or utilised thereby is, used or intended for use in connection with mining operations.

(40) "manufacturer" means an individual, association of individuals, company or institution who manufactures machinery, plant, equipments, appliance or substance for use in coal mines.

(41) "mine", for the purpose of chapter IV under these regulations, means all excavations within the mine boundary and all premises, plants, machinery & works as specified in clause (j) of subsection (1) of section (2) of the act and the same shall collectively constitute a mine.

(42) "misfire" means the failure to explode of an entire charge of explosives in a shot hole or blast hole.

(43) "month" means a calendar month.

(44) "Official" means a person appointed in writing by the owner, agent or manager to perform duties of supervision in a mine or part thereof and includes an assistant manager, a ventilation officer, a safety officer, a sampling in-charge, a dust in-charge, an overman, a sinder, an engineer and a Surveyor.

(45) "Onsetter" means a person appointed to superintend the raising and lowering of persons, tools & materials and to transmit signals at any inset or shaft bottom.

(46) "Overman" means a person possessing a manager's or overman's certificate, appointed by the manager in writing, under any designation whatsoever, to perform the duties of supervision or control in a mine or part thereof, and is as such superior to a sinder.

(47) "Permitted explosives" means an explosive manufactured by such firm & of such type as the chief inspector may, from time to time specify by a general or special order.

(48) "Pipeline" means a pipeline laid or being used in a mine for the purpose of pumping or supply of water, sand stowing or filling of materials other than sand stowing, nitrogen flushing or for any other purposes including extraction of coal mine methane (CMM), Abandoned mine methane (AMM) and other associated pipelines.

- (49) "public road" means a road maintained for public use and under the jurisdiction of any Govt or local authority.
- (50) "quarter" means a period of 3 months ending on the 31st March, 30th June, 30th Sep & 31st Dec.
- (51) "railway" means a railway as defined in the Railway Act 1989 (24 of 1989)
- (52) "regional inspector" means an inspector of mines having jurisdiction over a geographical area in which the mine is situated and over which he exercises his powers under the Act.
- (53) "river" means any stream or current of water, whether seasonal or perennial, and includes its banks extending up to the highest known flood level.
- (54) "risk" means combination of likelihood of a specific unwanted event and its potential consequences.
- (55) "schedule" means a schedule appended to these regulations.
- (56) "shaft" means a way or opening leading from the surface to workings below ground or from one part of the workings below ground to another, in which a cage or other means of conveyance can travel freely suspended, with or without the use of guides.

(57) "shot firer" means a person so appointed under regulation 190.

(58) "tub" includes a wagon, car, truck or any other vehicle moving on rail for conveying materials.

(59) "ventilation district" means such part of a mine below ground as has an independent intake airway commencing from a main intake airway, and, in the case of a mine or part thereof which is ventilated by natural means, the whole mine or part.

(60) "working place" means any place in a mine to which any person has lawful access.

RETURNS, NOTICES AND RECORDS

Notice of opening.

- (1) The notice for commencement of any mining operation under section 16 of the act shall be submitted in form 1A. accompanied by a plan showing the boundaries of the mine and the shafts or openings of the mine, trijunction or revenue pillars and other prominent and permanent surface features to the chief inspector & a copy thereof to the Regional Inspector.
- (2) The notice referred to in sub-regulation (1) shall be accompanied by
 - (a) a copy of the surface plan prepared under clause (a) of sub-regulation (1) of regulation 65.
 - (b) a copy of safety management plan prepared under regulation 104. Provided that in respect of a mine which has already been opened, the plan referred to in clauses (a) and (b) shall be submitted within 60 days and one year respectively of coming into force of these regulations
- (3) When a mine has been opened, the owner, agent or manager shall forthwith communicate the actual date of opening to the chief inspector, the Regional Inspector & the District Magistrate.

Annual returns

- (1) On or before 1st day of February in every year, the owner, agent or manager shall submit to the chief inspector, the regional inspector and to the District Magistrate annual returns in respect of the preceding year in the form 3.
- (2) If a mine is abandoned or closed or workings thereof is discontinued over a period exceeding 60 days or if a change occurs in the ownership of a mine, the returns required under sub-regulation (1) shall be submitted within 30 days of such abandonment or closure or change of ownership or within 90 days of discontinuance, as the case may be.

Notice of abandonment, closure or discontinuance.

- (1) When it is intended to abandon or close a mine or seams or to discontinue workings thereof for a period exceeding 60 days, the owner, agent or manager shall give a notice in form 1C for closure or abandonment & form 1D for discontinuance to the chief inspector, the regional inspector and to the District Magistrate stating the reasons for such abandonment, closure or discontinuance & the no. of persons likely to be affected thereby, not less than 30 days before such abandonment or discontinuance.
- (2) Notwithstanding anything contained in sub-regulation (1), when it is intended to abandon, close or discontinue for more than 60 days any work below ground over which is situated any property vested in the

Govt or local authority or any railway or any building or permanent structure not belonging to the owner, the owner, agent or manager shall not less than 30 days before the date of such abandonment, closure or discontinuance give notice of his intention to the chief inspector & the Regional inspector.

- (3) When a mine or seam has been abandoned, closed or the workings thereof has been discontinued over a period exceeding 60 days, the owner, agent or manager shall, within 7 days of the abandonment, closure or expiry of the said period of discontinuance, give to the chief inspector, the Regional inspector and to the District Magistrate, notice in the form C & D as applicable.

Notice of Reopening

- (1) When it is intended to reopen a mine or seam after abandonment, closure or discontinuance for a period exceeding 60 days, the owner, agent or manager shall, not less than 30 days before resumption of mining operations, give to the chief inspector, the Regional inspector and to the District Magistrate notice in Form 1-B.
- (2) When a mine has been reopened, the owner, agent or manager of the mine shall forthwith communicate the actual date of the reopening to the chief inspector, the Regional inspector and to the District Magistrate.

Notice of change in ownership and appointment of agent, manager etc.

- (1) When a change occurs in the name or ownership of a mine or in the address of the owner, the owner, the agent or manager shall, within 7 days from the date of change, give to the chief inspector and the Regional inspector a notice in form 2A for change in name of mine, 2B for change in ownership of mine & in form 2C for change of address of owner, agent or manager.
- (2) When the ownership of a mine is transferred, the previous owner or his agent shall make over to the new owner or his agent, within a period of 7 days of the transfer of ownership, all plans, sections, reports, registers and other records maintained in pursuance of the Act and of the regulations or orders made there under.
- (3) The owner of a mine shall submit in writing to the chief inspector and the Regional inspector, a statement showing the name & designation of every person authorised to act on behalf of the owner in respect of management, control, supervision or direction of the mine.
- (4) Any change, addition or alteration in the names or other particulars of the statement referred to in sub-regulation (4) shall be reported in writing to the chief inspector and Regional inspector within 7 days from the date of change, addition or alteration.

Notice of dangerous occurrence or accident.

- (1) When there occurs in or about a mine
 - (a) an accident causing loss of life or serious bodily injury in connection with any mining operations,
 - (b) a readily identifiable event with potential to cause an injury to person at work, hereinafter referred to as dangerous occurrence.
- (2) The owner, agent or manager shall simultaneously exhibit a copy of the notice referred to in sub-
regulation (1) on a special notice board at the office of the mine.
- (3) When an accident causing loss of life, serious bodily injury or burn injury occurs in or about a mine in connection with the generation, storage, transformation, transmission, supply or use of electrical energy, the owner, agent or manager shall also forth-
with inform the Inspector of mines (Electrical) by telephone, fax, email or by special messenger.

Notice of disease.

Where any person employed in a mine contracts any disease notified by the central govt in the official gazette, under section 25 of the Act, the owner, agent or manager shall within 3 days of his being informed of the disease, give notice thereof in Form S, to the chief inspector, the regional inspector, inspector of mines (medical), the district magistrate & to the competent Authority for payment of compensation.

EXAMINATION AND CERTIFICATES OF COMPETENCY AND FITNESS

Board of Mining Examinations

- (1) For the purpose of these regulations, there shall be constituted a Board of mining examinations (herein after referred to as 'the Board')
- (2) The board shall consist of the chief inspector, who shall be its chairman and 5 members possessing degree in mining engineering with
 - (a) First class manager's certificate granted under regulation 11
 - (b) practical experience of not less than two years in mgmt, control, supervision and direction of a coal mine or part thereof or
 - (c) service in an institution imparting education in mining engineering at the degree or equivalent level
 - (d) engagement in mining research or planning, to be appointed by the central Govt.
- (3) Every member of the board other than its chairman shall hold office for a period of 3 years from the date of appointment, or until his successor is appointed, whichever is later.
- (4) A person who holds, or who has held, office as member of the board shall, subject to the other provision of these regulations, be eligible for re-appointment to that office.
- (5) A member of the board other than the chairman shall receive such remuneration as the central govt may fix.

Certificates granted by board.

- (1) The certificates specified in sub regulation (2) shall be granted by the Board.
- (2) certificate granted by the Board shall be valid throughout the territories to which these regulations extend and shall be of the following kinds namely,
 - (a) Manager's first class certificate of competency to manage a coal mine (hereinafter referred to as a First class Manager's certificate)
 - (b) Manager's second class certificate of competency to manage a coal mine (hereinafter referred to as a second class manager's certificate)
 - (c) Surveyor's certificate of competency to survey the workings of a mine (hereinafter referred to as a Surveyor's certificate)
 - (d) Overman's certificate of competency to carry out inspection and duties as required under these regulations (hereinafter referred to as an Overman's certificate)
 - (e) Sirdar's certificate of competency to carry out inspection and duties as reqd under these regulations (hereinafter referred to as a Sirdar's certificate)
 - (f) winding engineman's certificate (hereinafter referred to as a Engine Driver's certificate) to drive a winding engine of any type or class, and
- (3) certificate of competency to test for the presence of inflammable gas (hereinafter referred to as a Gas Testing certificate)

Examinations and Examiners

(1) certificates shall be granted to candidate after such examinations and in such form as the board may specify.

provided that the board may, subject to the conditions specified in bye laws, exempt any person from appearing at the examination or part thereof for the grant of a certificate referred to in regulation

11.

(2) The examination shall be held at such times & at such centres as may be fixed by the board, and shall be conducted by examiners appointed by the board.

(3) The board may make bye laws as to the procedure for, and the conduct of the examinations and as to the granting of certificates of competency and of fitness as required under these regulations, and shall so far as may be practicable, provide that the standard of knowledge reqd for the grant of certificates of any particular class and the standard of medical fitness shall be uniform throughout the territories to which these regulations extend.

provided that the board may take decision on any matter, not specified under the bye laws, which may be brought to it for disposal.

Submission of Applications

(1) Application for an examination conducted by the board shall be made to the board not less than 60 days prior to the date fixed for the examination

in a manner and on a form specified for the purpose.

(2) Notice regarding the date and place of the exam for the manager's certificate, surveyor's certificate and overman's certificates shall be published under the order of the board in such periodicals or by any other means as the board may direct, not less than 60 days prior to the date fixed by the board for receiving applications.

- Application shall be submitted not less than 30 days prior to the date of examinations.
- Notice regarding date and place of examination shall be published not less than 30 days prior to the date fixed for receiving applications.

Age limit and general qualifications of candidates

(1) NO person shall be admitted as a candidate at any examination held by the board unless he is 20 yrs of age.

(2) NO person shall be admitted as a candidate at any examination for a Manager's certificate, surveyor's certificate, overman's certificate or sirdar's certificate unless he holds a valid first aid certificate of the St. John Ambulance Association (India) or any other equivalent standards as may be specified by the chief Inspector.

3) Every application for any examination as aforesaid shall be accompanied by -

- (i) a certificate of age verified by a Gazetted officer of the Govt or by the headmaster of a recognised school of a higher secondary or eqv. standard.
- (ii) a medical certificate obtained not more than one year prior to the date of his application, from a qualified medical practitioner not below the rank of a civil Assistant Surgeon, certifying the candidates to be free from deafness, defective vision or any other infirmity, mental or physical, likely to interfere with the efficiency of his work.
- (iii) a certificate from some person of good repute as to the general good conduct and sobriety of the candidate.

(4) NO person shall be admitted as a candidate to any examination for Manager's certificate, Surveyor's certificate, Overman's certificate or Sirdar's certificate, unless he has passed the Senior Secondary school examination or intermediate examination or its equivalent from a recognised board or university.

(5)
(a) NO person shall be admitted as a candidate at any examination for a Manager's or an Overman's certificate, which is not restricted to mines having opencast working only, unless he has obtained at least a Sirdar's certificate, which is not restricted to mines having opencast

- wonking only and a Gastesting certificate, and
- (b) no person shall be admitted as a candidate at an examination for manager's certificate or Overman's certificate restricted to mines having open cast wonking only, unless he has obtained at least a sirdor's certificate.

Practical experience of candidates for manager's certificate examinations

- (1) NO person shall be admitted as a candidate at any examination for a first or second class manager's certificate other than an exchange certificate to which the provisions of regulation 21 apply, unless the board is satisfied that he has had practical experience in coal mines as prescribed under sub-regulation
- (2) for a period of not less than six & five years respectively

Provided that a candidate

- (a) who has received a diploma in mining or mining engineering or other equivalent qualification approved in that behalf by the central Govt, such period of exp. shall be reduced to five & four years respectively, and
- (b) who has passed a degree in mining engineering or other equivalent qualification approved in that behalf by the central Government, such period shall be reduced to two years for first class manager's certificate.
- (3) The board may specify, subject to the conditions laid down in bye laws, the nature and other details of the practical experience required for manager's certificate.

Practical experience of candidates for surveyor's certificate examination

NO person shall be admitted as a candidate at any examination for a surveyor's certificate unless he has satisfied the board that he has not less than two years' practical experience of surveying of a type the board may specify, subject to the condition laid down in bye-laws.

provided that such period shall be reduced to six months in the case of a candidate who has attended classes in theory & practical surveying at any educational institution approved by the board subject to the conditions laid down in bye laws.

Practical experience of candidate for sirdar's certificate examination.

(1) NO person shall be admitted as a candidate at any examination for a sirdar's certificate unless the board is satisfied that he has had practical experience & training in a coal mine for a period of not less than 3 years

provided that such period shall be reduced to a period of one year in the case of a candidate who has received a diploma or certificate in scientific & mining training after a course of at least two years at an educational institution or who has taken a degree in scientific and mining subject at a university, approved in that behalf by the board subject to the conditions laid down in bye-laws.

NO. OF attempts at examinations

NO person shall be admitted for examination for a particular certificate beyond 7 attempts from the date of coming into force of these regulations.

Fee for grant of certificates.

- (1) Fees to be paid in respect of every application for the grant of a certificate shall be prescribed by the board, subject to the conditions laid down in byelaws.
- (2) The fees once paid shall not be refundable except where the candidate has died before the examination for grant of a certificate or where fee has been erroneously paid.

Duplicate certificate

If any person proves to the satisfaction of the board that he has, without any fault on his part, lost or been deprived of a certificate granted to him under these regulations, the board may upon realisation of the fee prescribed under sub-regulation (1) of regulation 20 and subject to the conditions laid down in bye-laws, cause a copy of the certificate to be delivered to him and the word "DUPLICATE" shall be stamped across every such copy

suspension or cancellation of Manager's certificate, Surveyor's certificate, Overman's certificate, Sirdar's certificate, Engine Driver's certificate or Gas Testing certificate.

- (1) If on the basis of a report of the Inspector, the Regional Inspector is of the opinion that the holder of a Manager's certificate, Surveyor's certificate, or Gas testing certificate is incompetent or is guilty of negligence or misconduct in the performance of his duties under the Act or under these regulations, he shall bring the matter to the notice of the board.
- (2) The board may, on the report of the Regional Inspector under sub-regulation (1), authorize an Inspector, not below the rank of the Inspector whose report formed the basis of the said opinion, to hold an enquiry in accordance with the procedure laid down in bye laws, to determine whether or not such a person is fit to continue to hold such certificate.
- (3) The Inspector who conducted the enquiry shall, within 15 days from the date of conclusion of his enquiry, send a report to the board together with his findings, the notes of evidence recorded during the enquiry and other relevant records.
- (4) Copies of the notes of evidence and the findings of the Inspector who conducted the enquiry shall also be sent to the delinquent who may submit his written representation to the board within 30 days from the date of dispatch of such copies.
- (5) An appeal shall lie against any order of the board until this regulation before the central Govt within 30 days of such order.

Validity of certificate for managers and official, etc

- (1) NO person shall act as a manager or an official or a winding engineman in a mine after attaining the age of 60 years unless he has obtained, within the preceding one year, a medical certificate of fitness certifying him fit to carry out the duties prescribed for him in the Act and in these regulations and orders made hereunder.
- (2) The medical certificate of fitness as aforesaid shall be obtained from such authority and in such form and manner as the board may specify subject to the conditions laid down in bye-laws.
- (3) NOT WITHSTANDING anything contained in sub-regulation (1), NO person shall act as manager or an official or an winding engineman in a mine after attaining the age of 70 years.

INSPECTORS AND MINE OFFICIALS

Qualifications of inspectors

- (a) NO person shall be appointed as chief inspector unless he holds a degree in mining engineering of an educational institution approved by the central Govt. and also a first class manager's certificate granted under regulation 11.
- (b) NO person shall be appointed as an inspector unless he hold a degree in mining engg. of an educational institution approved by the central govt and also a first class manager's certificate granted under regulation 11.

Qualification and appointment of manager.

- (1) NO mine shall be opened, worked or reopened unless there is a manager of the mine, being a person duly appointed and having such qualification as required under this regulation.
- (2) NO person shall act or be employed as a manager unless he has attained 23 years of age and is paid by, and is directly answerable to the owner or agent of the mine.
- (3) Subject to the provisions of sub regulation (4), no person shall act or continue to act, or be appointed, as manager of a mine or mines the average output of which corresponds to the figures given in column (1) of the table below unless he holds the corresponding qualifications given in column (II) thereof.
- provided that in respect of a mine having both opencast and underground workings, a person holding First class manager's certificate not restricted to opencast mines shall only be appointed as the manager of the mine irrespective of production.

For Opencast mines

(c) In excess of 20,000 m³ per month of material handled.

(d) Not exceeding 20,000 m³ material handled per month.

A first class manager's certificate.

A first class manager's certificate or second class manager's certificate.

(4) Where under the provisions of sub regulation (3) a person holding a first class manager's certificate or second class manager's certificate has been appointed as manager, a person holding lower qualifications shall not, except with the previous permission in writing of the chief inspector and subject to such conditions as he may specify therein, be so appointed during the succeeding 12 months, notwithstanding any reduction in the avg. output of the mine.

(5) 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.

(6) The person so authorised to act as manager under sub-regulation shall during the period of such authorisation, have the same responsibilities, discharge the same duties, and be subject to the same liabilities as the manager.

- (7) NO person (manager) shall vacate his office without giving due notice in writing to the owner or agent at least 30 days before the day on which he wishes to vacate his office.
- (8) NO owner or agent shall transfer, discharge or dismiss a manager unless the manager has been relieved by a duly qualified person as specified under sub-regulation (3)
- (9) The owner or agent shall provide suitable residential accommodation for the manager and the assistant manager with in a distance of 5 km from all mine openings, and every manager and assistant manager shall reside in the accommodation so provided.
- (10) NO manager shall be entrusted by the owner or agent with any work, nor shall he himself perform any work, which may necessitate his frequent or prolonged absence from the mine.
- (11) If any doubt arises as to any matter under sub-regulation (11) or sub-regulation (12), it shall be referred to the chief inspector for decision.
- (12) Except as hereinafter provided in sub-regulation (5), no manager shall act as manager or in any other capacity in another mine.

Charge Report of Manager.

When there is a change of manager of any mine, the outgoing manager shall hand over to the incoming manager, a charge report in form 7 and the charge report shall be signed by both the outgoing and incoming managers and a copy of the charge report shall be sent to the regional inspector.

- In every belowground mine the average monthly output which exceeds 5000 tonnes or in every opencast mine the average monthly material handled of which exceeds $20,000 \text{ m}^3$, the manager shall be assisted in the work of promoting safe practices in the mine by a safety officer who shall be a person holding the following qualifications, namely
- (a) in the case of a belowground mine having an avg. monthly output in excess of 15,000 tonnes, a first class manager's certificate not restricted to opencast mines only.
 - (b) in case of a mine having opencast workings with an avg. monthly material handled in excess of $50,000 \text{ m}^3$, a first class manager's certificate.
 - (c) in case of a belowground mine having an avg. monthly material handled excess of $20,000 \text{ m}^3$ but not exceeding $50,000 \text{ m}^3$, a first class manager's certificate or second class manager's certificate.
 - (d) in the case of a belowground mine having an avg. monthly output in excess of 5,000 tonnes but not exceeding 10,000 tonnes, holder of a first class manager's certificate or second class manager's certificate not restricted to opencast mines only, or a degree or diploma in Mining or Mining Engineering approved by the central Govt.

Provided that where special conditions exist, the chief inspector may by an order in writing and subject to such conditions as he may specify herein, permit or require the appointment of a safety officer in variation of these provision.

Qualification and appointment of ventilation officer-

In every belowground mine consisting of gassy seams of first degree, the average output which exceeds 5,000 tonnes or of second or third degree the avg. output of which exceeds 2,500 tonnes, the manager shall be assisted in the work of supervising the maintenance of ventilation systems of the mine in accordance with the provisions of these regulations by a ventilation officer who shall be a person holding the following qualifications, namely,

- (a) In the case of a mine consisting of gassy seams of first degree and having an avg. output in excess of 15,000 tonnes or a mine consisting of gassy seams of second or third degree and having an avg. output in excess of 10,000 tonnes, a manager's certificate not restricted to open cast mines only and
- (b) In every other case, a manager's certificate not restricted to open cast mines only or a Degree or Diploma in Mining or Mining Engineering recognised by the central govt.

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 or require the appointment of a ventilation officer in variance of these provisions or require appointment of such number of persons to assist the ventilation officer, as may be specified in the order.

Appointment of engineers

- (1) At every mine where machinery is used, an engineer holding a degree or diploma in mechanical engineering, electrical engineering, mining machinery, or equivalent qualifications as may be recognised by the central Govt. shall be appointed to hold general charge of such machinery, and to be responsible for its installation, maintenance and safe working, who shall be subordinate to manager.
- (2) Notwithstanding anything contained in sub-regulation (1), the chief inspector may, by an order in writing, specify any qualification in addition to those referred to in that sub-regulation in respect of a mine or class of mines, if having regard to the conditions existing in such mine or class of mines, he is satisfied that it is necessary to do so in the interest of safety.
- (3) No person shall act, or be appointed, as engineer 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
Provided that no such permission shall have effect for a period exceeding 12 months, unless renewed.
- (4) Where by reason of temporary absence by any cause, the engineer, appointed under sub-regulation (1) is unable to perform his duties, the manager shall authorise in writing a person whom he considers competent to act in his place
Provided that

- (a) notice of every such authorisation shall be sent to the Regional Inspector forthwith.
- (b) no such authorisation shall have effect for a period in excess of 30 days except with the previous written consent of the Regional Inspector and subject to such conditions as he may specify therein, and
- (c) the Regional Inspector may by an order in writing, revoke any authority so granted.

Appointment and certification of senior officials

- (1) At every mine, one or more overmen shall be appointed to hold charge of the different districts of the mine on each working shift unless otherwise specified by the Regional Inspector.
- (2) The district assigned to an overman under sub-regulation (1) shall not be of such size, nor shall any additional duties other than his duties under these regulations be such, as are likely to prevent him from carrying out in a thorough manner, the duties assigned to him under these regulations.
- (3) For the purpose of this regulation, every person employed as an official subordinate to the manager and superior to the sirdar shall hold either a Manager's certificate or an Overman's certificate.

Appointment of surveyors

- (1) At every mine, one or more persons holding a surveyor's certificate shall be appointed to be the surveyor for carrying out the surveys & levellings and for preparing the plans and sections required under the Act or the regulations, or orders made thereunder.

Provided that in case of mines having open cast workings only, nothing in this sub regulation shall prohibit the appoint of one or more persons holding a surveyor's certificate restricted to open cast mines only for carrying out the surveys & levellings and for preparing the plans and sections required under the Act or the regulations or orders made thereunder.

(2) NO person shall be appointed as a surveyor of more than one mine 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

(3) The number of surveyors reqd to be appointed shall be on the scale as may be specified by the board.

(4) If a mine has more than one surveyor, each shall carry the duties and the responsibilities for the preparatm surveyor for the part or sections of the mine to be assigned in writing by the owner, agent or manager.

Provided that the owner, agent or manager shall appoint one of the surveyors to be responsible for the preparatm & maintenance of the plans reqd to be prepared and maintained under these regulation who shall also be responsible for the co-ordination and overall supervision of survey work in the mine.

• Appointment of officials and competent persons

(1) The owner, agent or manager shall appoint such no. 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 equipment thereof.
- (b) a thorough supervision of all operations in the mine.
- (c) the installation, running & maintenance, in safe working order, of all machinery in the mine and
- (d) the enforcement of the requirements of the Act & Rules and regulations framed thereunder.

(2) Without prejudice to the requirement of the sub-regulation (1), where the mine is worked on more than one shift, the owner, agent or the manager shall arrange that during the afternoon shift and the night shift, the mine is under the general supervision of at least an assistant manager, and of an experienced overman in other cases.

(3) It shall be the responsibility of the manager to see that the person so appointed are competent to perform the duties assigned to them.

Provided that no person shall be so appointed unless he is paid by the owner or agent & is answerable to the manager.

(4) Copies of all appointments made under sub-regulation (1) shall be entered in a bound paged book kept for the purpose where a list of all such competent persons shall be maintained

(5) Without prejudice to the requirements of sub-regulation (3), every manager or taking over charge of a mine,

shall satisfy himself that all persons already appointed under sub-regulation (1) are competent to perform the duties assigned to them, and if he finds them competent, he shall either countersign their authorisations or issue fresh ones.

General Management.

- (1) The owner, agent and manager shall provide for the safety and proper discipline of persons employed in the mine.
- (2) Except in a case of emergency, no person who is not an official or competent person shall give, otherwise than through the manager, instructions to a person employed in a mine, who is responsible to the manager.

DUTIES AND RESPONSIBILITIES OF MINE MANAGEMENT, CONTRACTORS, MANUFACTURERS, OFFICIALS, COMPETENT PERSONS AND WORKMEN.

Duties and Responsibilities of owner.

- (1) In taking preventive and protective measures, the owner shall arrange for regular assessment of the risk and dealing with it in the following order of priority
 - (a) eliminate the risk.
 - (b) control the risk at source
 - (c) minimise the risk that include the design of safe work systems, and
 - (d) in so far as the risk remains provide for the use of personal protective equipment, having regard to what is reasonable, practicable and feasible.
- (2) owners shall take necessary measures to eliminate or minimise the risks to safety and health of persons employed in mines under their control and shall
 - (a) ensure that the mine is designed, constructed and provided with electrical, mechanical and other equipment, including a communication system to provide conditions for safe operations & a healthy working env.
 - (b) ensure that the machine is commissioned, operated, maintained and de-commissioned in such a way that workers can perform the work assigned to them without endangering their safety and health or that of other persons
 - (c) take steps to maintain the stability of the ground in which persons have access in the context of their work.

- (d) where practicable, provide from every underground workplace, two exits each of which is connected to separate means of egress to the surface.
 - (e) ensure the monitoring, assessment and regular inspection of the working env to identify the various hazards to which the workers may be exposed and to assess their level of exposure.
 - (f) ensure adequate ventilation for all underground working to which access is permitted.
- (3) The owner shall ensure preparations of an emergency response plan specific to each mine for reasonably foreseeable industrial and natural disasters.
- (4) Where workers are exposed to physical, chemical or biological hazards the owner shall
- (a) inform the workers, in a comprehensible manner, of the hazard associated with their work, the health risks involved and relevant preventive and protective measures
 - (b) take appropriate measures to eliminate or minimise the risks resulting from exposures to those hazards.
- (5) The owner shall ensures that
- (a) adequate training & retraining programs and comprehensible instructions are provided for workers, at no cost to them, on safety and health matters as well as on the work assigned.
 - (b) adequate supervision and control are provided in each shift to secure the safe operation of the mine.
 - (c) all accidents and dangerous occurrences are investigated and appropriate remedial actions are taken.

Responsibilities of contractor.

- (1) A contractor deployed in a mine for any work shall
 - (a) establish effective ongoing communications and co-ordination between appropriate levels of supervisors, officials and senior officials of the mine prior to commencing work, which shall include provisions for identifying hazards and the measures to eliminate and control risks.
 - (b) ensure arrangements for reporting work relating injury & diseases, ill health and incidents among his workers while performing work in the mine.
 - (c) ensure compliance of the provisions of the Act, and the rules and regulations framed thereunder.

(2) When deploying contractors, the owner agent and manager shall ensure that

- (a) the same safety and training requirements apply to the contractors and their workers as to the workers of the establishment.
- (b) where required, only such contractors are deployed that have been duly registered or hold licences,
- (c) the contract specify and health requirements as well as sanctions and penalties in case of non-compliance and such contract shall include the right for mine officials to stop the work whenever a risk of serious injury is apparent and to suspend operations until the necessary remedies have been put in place.

Duties of competent person.

Every competent persons shall be subject to orders of superior officials

- (a) depute another person to perform his work without the sanctions of his superior official.

- (b) absent himself without having previously obtained permission from such official for the term of his absence or without having been relieved by a duly competent person and
- (c) without permission from such official, perform during his shift any duties other than those for which he has been appointed.

Duties of officials

- (1) Every officials shall carry out the duties assigned to him by the manager or assistant manager in accordance with the provisions of the Act and of these regulations and orders made thereunder.
- (2) Every officials shall, to the best of his power, see that persons under his charge understand and carry out their respective duties properly.

Duties and responsibilities of Manager.

- (1) In every mine, daily personal supervision shall be exercised by the manager.

Provided that in case of working belowground he shall visit and examine the workings on at least 4 days in every week to ensure safety in every respect provided further that at least one visit in every fortnight shall be made during the night shift.

Provided also that where owing to any unavoidable cause he is unable to carry out the aforesaid duties or inspections he shall record the reasons for the same in the book kept under sub-regulation (2)

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

- (3) The manager shall make arrangements for all overman and other officials to meet him or the assistant manager once in every morning day for the purpose of conferring with them on the matters connected with their duties.
- (4) The manager shall ensure sufficient supply of proper materials and appliances for the safety of the mine and the persons employed therein and if he be not the owner or agent of the mine, shall report in writing to the owner or agent when anything is required for the aforesaid purpose that is not within the scope of his authority to order, and a copy of every such report shall be recorded in a bound page book kept for the purpose.
- (5) On receipt of a requisition under sub-regulation (4), the owner or agent shall promptly arrange to supply the said materials and appliances, and shall within 3 days of receipt of the requisition, intimate to the manager in writing the action taken to meet the requisition.
- (6) The manager shall assign to every competent person his particular duties and take all possible steps to ensure that every such person understands and carries out the provision contained in the Act and the rules or regulations made thereunder in a proper manner.
- (7) The manager shall provide every overman with a tracing, upto date of the last surveys, showing the workings of the districts belowground assigned to him and such tracing shall, where any work of reduction or extraction of pillars is being carried out, show clearly the reference of the permission and the manner in which such reduction or extraction is being carried out.

(8) The manager shall examine all reports, registers & other records required to be made or kept in pursuance of the provisions of the Act or of the Regulations or orders made thereunder, and shall countersign the same with date.

(9) The 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) The manager shall perform such other duties as have been prescribed in that behalf under the provision of the Act, the regulation or orders made thereunder

(11) The manager may suspend or take such disciplinary action against any employee for contravention of any of the provisions of the Act or the regulations & orders made thereunder.

Duties of safety officer

(1) The duties of the safety officer shall be

(a) to visit surface & underground parts of the mine with a view to meet the workers on the spot, to talk to them on matters of safety and invite suggestion thereon.

(b) to take charge of the newly recruited staff and show them around the mine pointing out the safe and unsafe acts during the course of their work in the mine.

(c) to investigate all types of accidents and incidents in the mine including minor accidents and analyse the same with a view to pinpoint the nature and common causes of accidents in the mine.

- (d) to maintain detailed statistics about mine accidents and to analyse the same with a view to pinpoint the nature and common causes of accidents in the mine.
- (e) to study and apprise the manager of all possible sources of dangers such as inundation, fire, coal dust & others.
- (f) to hold safety classes and give safety talks and lect. to the members of the supervisory staff.
- (g) to organise safety weeks and other safety education and propoganda programmes in mines.
- (h) to see that all concerned mine employees are fully conversant with various standing orders codes of practices and support plan.
- (i) to provide assistance in the formulation of programme for training at the mine level, including vocational training, training in gas testing, and training in first aid.
- (j) to report to the manager as a result of his visit to the various parts of mine, as to whether the provisions of the Act, and the rules and regulations made there under are being complied with in the mine.
- (k) to promote safe practices generally and to lend active support to all measures intended for furthering the cause of safety in the mine and follow up measures for compliance to the recommendations of the safety committee and workman's inspector.
- (l) to assist the manager in any other matter relating to safety in the mine.
- (2) The safety officer shall ensure that an appropriate emergency plan as required under these regulations is put in place and the requirements of the same are implemented.

(3) Except in an emergency, no duties other than those specified above shall be assigned to the safety officer.

(4) The safety officer shall maintain in a bound Paged book a detailed record of the work performed by him every day.

Duties and responsibilities of assistant manager.

(1) The assistant manager shall carry out the duties assigned to him by the manager, and shall see that in the part of the mine assigned to him by the manager all work is carried out in accordance with the provisions of the Act and of the regulations and orders made thereunder.

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

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

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

(5) The assistant manager shall, in a bound Paged book kept for the purpose, record the result of each of his inspections and also the action taken by him to rectify the defects noticed, if any.

Duties of ventilation officer.

(1) The ventilation officer shall

- (a) ensure the observance of all regulations and orders concerning ventilation, spontaneous heating, fire, gas and coal dust including dust suppression and shall advise the manager, if any alteration is required in the verification system to ensure adequacy of ventilation in compliance with these regulations or orders
- (b) advise the manager on day to day problems of ventilation, gas, coal dust, spontaneous heating and fire.
- (c) maintain close liaison with the assistant managers and other officials and assists them in their day to day ventilation problems
- (d) carry out ventilation surveys of the mine and undertake any other special work relating thereto as may be directed by the manager from time to time.
- (e) take such steps as are necessary to ensure compliance with the ventilation standards reqd. in terms of these regulations or otherwise.
- (f) check the speed of main mechanical ventilator, amperage drawn by its electric motor and fan drift water gauge at least once in a day and he shall investigate any unusual change in the water gauge and report to the manager.
- (g) determine the efficiency of the main mechanical ventilator once at least in every 3 months and get the fan blades and the fan drift cleaned when necessary
- (h) ensure that copies of standing orders in the event of stoppage of the main mechanical ventilator are posted at conspicuous places at the mine, and also ensure that the person concerned understand the instruction contained therein.
- (i) ensure the correct siting and installation of auxiliary and booster fans belowground.

- (j) examine at frequent intervals all ventilation appliances like doors, brattices, air crossings, regulators, stoppings, booster and auxiliary fans, ventilation ductings and other devices of ventilation control in the mine and report any defect in the same to the manager.
- (k) take necessary steps to stop any leakage through any of the devices and ensure that the ventilation appliances are maintained in good order.
- (l) maintain separate tracing of the ventilation, rescue, stone dusting and the dust samplings plans and bring them up to date.
- (m) bring to the notice of the surveyor any changes in the ventilation system or ventilation appliances & shall ensure that all old markings on the ventilation & rescue plans are corrected and new ventilation circuits are shown forthwith.
- (n) regularly check the barometer provided at the mine and report any unusual change in barometric pressure to the manager for appropriate actions.
- (o) take care of the instruments and apparatus used in the mines for environmental monitoring and ensure that all such instruments are maintained in good order and calibrated at specific intervals.
- (p) take necessary steps for proper cleaning, treatment and suppression of coal dust in the mine and see that the arrangements for wet cutting at the faces and water spraying at and within 90m of the working places are properly installed and function satisfactorily.
- (q) ensure that the stone dust barriers are correctly sited, properly constructed and maintained in accordance with the statutory requirements or otherwise and brings notices on the check boards up to date from time to time.