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buildings, shall be provided with means to drain or to confine the oil in event of break or rupture of transformer casing.

3. Permanent underground stations containing transformers shall be provided with doors that close automatically, and the stations should be in fire-proof housings. Where transformers filled with inflammable oil are used, the station shall be provided with door sills, or their equivalent, that will confine the oil if leakage or explosion occurs; when practicable, these stations should be on separate splits of air leading to the return.

4. Portable or temporary underground transformers should be located in fire-proof surroundings, or the location shall be made fire-proof, and the place shall be well ventilated.

5. Transformers to be installed in the future, both permanent and portable for use underground, should be air-cooled or non-flammable, liquid-cooled.

6. Casings of all transformers shall be grounded, unless protected by position or fencing from contact hazard.

7. DANGER - HIGH VOLTAGE signs shall be placed on all transformer enclosures, high-potential switchboards, and other high-potential installations.

Section C. Substations and Switchboards

1. Permanent underground substations, storage-battery charging rooms, motor generators, and other conversion equipment shall be in well ventilated fire-proof rooms.

2. Switchboards on the surface and underground shall be so located that ample room shall be provided between the switchboard and passageways or lanes of travel and shall have an entrance at each end to permit authorized persons to inspect, adjust or repair apparatus at the back of the board. Switchboards shall be well lighted for switch operations in the front and for repair and maintenance in the rear.

3. Pull switches and circuit breakers, or other power controls shall be mounted on insulating material.

4. Present installations which do not comply with the above provisions shall be exempted, but all provisions shall apply to future installations.

Section D. Power Circuits

1. High-potential power cables (600 volts or more) carried from the surface through shafts and underground passageways, shall be adequate for the services intended, installed in a permanent manner and guarded from mechanical injury.

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2. All power lines and cables in hoisting shafts or manway compartments shall be properly insulated and well protected.

3. Power wires, except metallic cable, shall be supported on or by well-installed insulators and shall not touch combustible materials, timbers, roof or ribs.

4. Power wires shall be insulated properly, when passing through doors and stoppings, and when crossing other power circuits.

5. All electric circuits shall be protected against lightning and power surges by lightning arrestors or other protective devices, where they enter the mine.

6. Power shall be disconnected, before repair work is to be done on energized electric circuits or energized parts of electric equipment.

7. Power cables for conveyor units and other face equipment shall be suspended between power circuit and face distribution box.

8. Where track is used as a power conductor, both rails of main line tracks shall be well-bonded.

9. Trolley and feeder wires shall be installed as follows:

   a. Kept taut and not permitted to touch the roof, rib, or cross bars; particular care shall be taken where passing through door openings.

   b. Unless wires are more than two meters above the top of the rail, they shall be guarded where it is necessary for men to pass or work under them regularly. The wires shall be guarded on both sides of the doors and shall be provided with circuit breakers or switches at the mine entrance and at each point of major division in the circuit.

   c. The hangers on curves shall be spaced so that the trolley wire shall not sag and become a hazard at any one hanger.

   d. The hangers shall be anchored securely and insulated properly at ends, and not located in air known to contain 1.0 percent or more methane, or in air returning from pillar or old workings where dangerous amounts of gas may be liberated suddenly.

10. Wiring in underground structures shall be insulated and installed properly, and wiring in all surface buildings shall be so installed as to present minimum fire and contact hazards.

11. Power shall be cut off from idle sections of a mine and from the ntire mine on idle days. This does not prevent the use of power circuits for operation of necessary pumps and for local fans.

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Section E. Grounding

1. Metal conduit and metallic coverings and armor of cables shall be grounded and shall be electrically continuous to afford a conductor path for the ground circuit.

2. Metallic frames, casings and other electric equipment that may become active through failure of insulation, or by contact with energized parts, shall be grounded.

3. Casing of transformers shall be grounded, unless protected by insulation.

4. Underground metallic pipe lines or ground circuits paralleling haulage roads or conveyor lines shall be electrically continuous throughout and shall be effectively grounded at intervals not exceeding 500 feet.

5. The metal frames of drills or other electric tools which are held in the hand while operated shall be grounded. The voltage of such hand-held equipment shall not exceed 250 volts.

Section F. Circuit Breakers and Switches

1. Electric equipment shall be protected against excess overloads by fuses or equivalent protective devices of the correct type and capacity.

2. Disconnecting switches shall be installed in all main power circuits at the bottom of shafts and other places where main power circuits enter the mine.

3. Underground electric equipment and circuits shall be provided with switches or other controls of safe design, construction and installation.

4. Rheostats and electric heaters shall be so installed as to prevent fire, electric shock, or burn injury hazards.

5. Dry wooden platforms, rubber mats, or other electrically non-conducting material shall be kept in place at all switchboards and stationary machinery where shock hazards exist.

Section G. Telephone and Signal Wires

1. Telephone service shall be provided at the bottom of each main shaft or slope and as near the working face as possible, with a telephone in each working section.

2. Telephone lines shall be carried on insulators; be adequately insulated where they cross power circuits; and installed on the opposite side of the entry or tunnel from power wires.

3. Telephone circuits shall be protected against lightning and power circuits by covered or enclosed fuse blocks and lightning arrestors.

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4. Signal wires shall be supported on insulators and insulated properly where they cross trolley wires.

ARTICLE 11 - ADDITIONAL SAFEGUARDS FOR MECHANICAL EQUIPMENT

Section A. General

1. Rock drilling with percussion drills shall be done wet, except where dust respirators are used.

2. Mining machine operators, drillers and operators of all mechanically operated face machinery shall not operate their equipment when any persons are in such proximity as to be endangered.

3. Adequate tools shall be available in working places and shall be maintained in good condition.

Section B. Shop and Other Equipment

1. Machinery and belting exposed to possible personal contact shall be guarded adequately, as indicated below:

a. Gears, sprockets, friction devices, and couplings with protruding nuts and bolts.

b. Shafting and projecting shaft ends that are within two meters of floor or platform level.

c. Belt, chain or rope drives that are within two meters of the floor or platform.

d. Where flywheels extend more than two meters above the floor, they shall be guarded to a height of at least two meters.

e. Circular and band saws and planers.

f. Repair pits; guards shall be kept in place when pits are not in use.

2. Machinery shall not be repaired or oiled while in motion, unless such oiling can be done without danger to oiler.

3. A guard or safety device removed from any machine shall be replaced, before the machine is put in operation.

4. Mechanically operated grinding wheels shall be equipped with:

a. Safety washers and tool rests.

b. Substantial retaining hoods, the hood openings of which shall not expose more than 90 degree sector of the wheel.

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c. Eye shields, unless goggles are worn while grinding.

ARTICLE 12 - UNDERGROUND FIRE PREVENTION

1. Fire fighting equipment and fire prevention measures adequate for the size of the mine shall be provided and adopted at each mine. Such measures may include:

a. Supplies of rock-dust or sand along haulage roads, on the intake side of wooden ventilation doors and other strategic locations where it would be readily available for an emergency.

b. Water or pump lines should be provided with hydrants or outlets to which fire hose could be attached. Compressed air lines could also be used for conversion to water lines for fire fighting purposes.

c. Fire hose can be provided and stored at several points in the mine where it can be readily obtained.

d. Water cars equipped with pumps and hose.

e. Cars, or a special car loaded with lumber, tile, brick, suitable fittings, nails and necessary tools kept readily available, are helpful.

2. Fire extinguishers approved for electrical fires should be kept at all electrical installations.

3. Supplies of rock-dust or clean dry sand should be provided and placed outside of underground electric stations.

4. Underground storage places for oil and grease shall be of fire-proof construction.

5. Lubricating oil and grease kept in the face region shall be in closed, metal containers.

6. Oil or grease shall not be allowed to accumulate around any electrical equipment.

7. Welding and cutting (with electricity or flame) required for necessary repairs in Class "A" mines in the face regions and in return air shall be under the direct supervision of an underground official technician or assistant technician supervisor. No welding or cutting shall be done, if more than 0.5 percent methane is present. In all welding and cutting operations special precautions shall be taken against fires.

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ARTICLE 13 - SURFACE STRUCTURES

Section A. Tipple and Cleaning Plants

1. In dusty locations, electric motors, switches, and controls shall be of dust-tight construction.

2. Coal dust shall be cleaned from the tipple frequently and, if necessary, daily.

3. Coal dust in tipples shall be allayed with water, where large quantities of dust are released.

4. Where coal is dumped at or near intake openings, reasonable provisions shall be made to prevent dust from entering the mine.

5. Welding shall not be done in dusty atmospheres or dusty locations, and fire-fighting apparatus shall be readily available during welding.

Section B. Steam and Compressor Plants

1. All boilers shall receive at least one internal inspection annually by an authorized inspector, and a written report of such inspection shall be kept.

2. A stairway or fixed ladder shall be provided to give easy access to top of boilers or runways between boilers.

3. Compressed-air receivers shall be protected with safety or relief valves.

4. Compressed-air receivers shall be inspected at least annually by a competent person.

5. Boilers and compressors shall be provided with steam, air, and water pressure gauges.

6. Compressed-air receivers shall be blown out or cleaned regularly.

Section C. Stairways, Ladders, and Platforms

1. Stairways in surface structures as tipples, cleaning plants, etc., shall be provided with safe handrails and kept in good repair; the treads of stairways should present a minimum slipping hazard and be of uniform construction and spacing.

2. Platforms, elevated walkways, and openings in floors shall be provided with toe boards and railings and maintained in good repair.

3. Flooring in surface structures shall be kept in good repair.

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4. A railed platform shall be provided at head sheaves, and stairways leading to sheave platforms shall be provided with handrails.

Section D. Surface Fire Prevention

1. Oil, grease and similar inflammable materials shall be stored in closed containers, separate from other materials, so as not to create a fire hazard to nearby buildings or mines.

2. Smoking in or about surface structures shall be restricted to places where it will not cause fire or an explosion.

3. Structures located within 100 feet of the mine opening should be of reasonably fire-proof construction; otherwise, fire doors shall be effective at points in mine openings to prevent smoke or fire from outside sources endangering underground workers.

ARTICLE 14 - MISCELLANEOUS

Section A. Mine Maps

1. Any person or corporation operating a coal mine shall have prepared a map of its underground workings on a scale of not smaller than 1:2,400. On such map shall be indicated all entries, tunnels, shafts, slopes or drifts working places both active, worked out or abandoned. In addition it shall show the direction of all air currents, the location of ventilation doors and fans; also, volume, temperature and methane content of the air at the end of each air split. Said mine map shall be extended at least once each six months.

2. A copy of the mine map shall be posted in the office near the opening of the mine. Copies shall also be furnished to the district mine inspector, the prefectural government office and the Department of Coal Mine Safety and Inspection.

3. In regard to mines producing less than 1,000 metric tons monthly, mine map extensions shall not be required oftener than once a year.

Section B. Mine Openings and Escapeways

1. Every underground mine shall have at least two separate surface openings.

2. Each coal seam and each level or entry therein shall have at least two travelable openings in connection with both main outlets to the surface.

3. It is not necessary that two main outlets belong to the same mine, if persons can travel safety to, and out of, either outlet from either mine.

4. The travelable passageways, which are classed as escapeways from each working section to the surface, whether the mines are shafts, slopes or level

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openings, shall be kept in a safe condition for travel. One of the passageways may be a haulage road, provided, however, that one of the escapeways shall be ventilated with intake air.

5. Direction signs shall be posted conspicuously to indicate manways and designated escapeways.

6. Where the designated escapeways are shafts or slopes of 40 degrees or over and hoisting equipment is used for lowering and raising men, an emergency ladderway shall be provided, except in case there is another passage through which men can go out and come in at any time without the help of hoisting equipment. The ladderway shall be:

a. Kept at an appropriate distance from the wall, with the inclination within 80 degrees.

b. A foot shelf shall be provided every five meters. This may be omitted, if the ladderway is less than 15 meters.

c. For safety and convenience in ascending and descending a ladder, a small landing shall be provided at the projecting end of each ladder.

d. In a shaft or slope of 40 degrees or over and where hoisting equipment is installed, a partition or a separating wall shall be provided in addition to a ladderway.

Section C. Approaching Abandoned Workings

1. Whenever any working place approaches within 200 feet of abandoned or old workings that cannot be inspected and that may contain dangerous accumulations of water or gas, bore holes shall be kept at least five meters in advance of the face and 45-degree-angle side holes shall be drilled at least five meters deep, and not more than three meters apart. If the head of water exceeds 50 meters, the depth of the bore holes should be increased 0.33 meters in length for each four-meter head of water.

Section D. Check-in and Check-out System

1. Each mine shall have a check-in and check-out system that will provide positive identification upon the person of every worker underground. An accurate record of the men in the mine, which shall consist of a written record or a check board, shall be kept on the surface. (It is recommended that an underground employee be given an indestructible check before entering underground and deposit the check when returning from underground).

Section E. Fire Hazards

1. Smoking shall be prohibited in all coal mines. Underground employees shall be searched at frequent intervals, preferably daily, for smoking material, matches, and other lighting devices.

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2. In locations where there is danger of spontaneous combustion, fire-resistant material shall be provided, so that in case of necessity the area may be quickly closed.

3. Abandoned workings where the danger of spontaneous combustion is likely to occur shall be filled up, made air-tight by seals, or shall have ample ventilation coursed through the working.

4. Temperature and humidity readings shall be taken and recorded where danger of spontaneous combustion exists, and careful attention shall be given to the changes.

5. Provisions shall be taken for collecting and analyzing the content of the air and gas from behind the places sealed, in addition to the recorded readings in the preceding paragraph.

Section F. Protective Clothing

1. Employees engaged in operations involving haulage, endless ropes, locomotives, and other haulage machinery on the surface and underground shall wear snug-fitting clothing; particularly, the bottom of the trousers shall fit snugly.

2. Welders and helpers shall use proper shields or goggles to protect their eyes.

Section G. Housekeeping

1. Good housekeeping shall be practiced by all underground employees and officials; this includes not only the safe and efficient storage of supplies, cleanliness of underground structures and removal of stumbling hazards along haulageways, but also includes the orderly storage of tools and materials by individual workmen.

Section H. Duty and Responsibility of Management

1. It shall be the duty of the mine manager, superintendent, foreman and other company officials to see that the provisions contained in this code pertaining to their respective departments are complied with.

2. The mine management of every mine shall adopt special rules for the government and operation of his mine or mines covering all the work in and around the mine; providing for reasonable penalties for the violation thereof. These rules shall be effective when approved by the competent Bureau Chief.

3. When such rules are adopted and approved, the most important safety rules shall be printed and posted in conspicuous places about the mines where they may be seen and observed by all employees. When such rules are posted, they shall operate as a notice to all employees at such mines of their acceptance of the contents thereof. The mine operator shall furnish a printed copy of the safety rules adopted by the company.

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Section I. Duties and Responsibilities of Mine Workers

1. It shall be the duty of the mine workers to comply with all ordinances, regulations and company rules promulgated for their protection and the preservation of property and to cooperate with management in the enforcement of any such ordinances, regulations or rules.

Section J. Portable Illumination

1. In Class "A" mines, portable approv d electric lamps shall be used.

2. The administrative office may order the use of approved electric lamps for Class "B" mines, if this is deemed necessary in the interest of safety.

3. More lamps shall be available than the total number of underground workers.

4. A safety lamp guard shall be selected and placed in charge of electric safety lamps. He shall be under the supervision of the safety supervisor or assistant safety supervisor.

5. Duties of a safety lamp guard:

a. Shall inspect, clean and keep safety lamps in safe working condition before giving them to workmen.

b. Shall keep a record of the safety lamps, the number in use, the persons using them, and the condition of all lamps.

6. A person using an electric safety lamp shall be governed by the following:

a. The battery cover, glass cover, or other parts of the lamp shall not be opened underground.

b. When a lamp is damaged or found defective, it shall immediately be exchanged for one in good condition.

ARTICLE 15 - GENERAL SAFETY PROVISIONS

Section A. First Aid

1. When material is available, all employees should be given first aid training as soon as possible after being employed.

2. First aid equipment, stretchers and blankets, shall be located on the surface, at bottom of shafts and slopes, and at other locations near working place to be used in case of injury to workmen.

3. When an injury occurs, a doctor shall be notified immediately and the injured person brought promptly to the surface.

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Section B. Mine Rescue Equipment

1. At least 10 sets of oxygen breathing apparatus and other necessary accessories shall be available at every mine for use in case of a fire or explosion. Several mines may have a joint rescue station, or a central station may be set up within a district under an association or group of mine owners.

2. At least two teams for each shift shall be trained and available in the use of mine rescue apparatus.

3. The men trained in mine rescue shall have additional training at least every three (3) months.

Section C. Instruction to Employees

1. New underground employees with no experience shall be instructed in the particular danger incident to their work in the mine by the supervisor in charge of the mine, or any assistant supervisor or safety guard designated by him.

2. The new worker shall not work alone until he has worked under the guidance of an experienced workman for at least 30 days.

3. In Class "A" mines the dangers and hazards of coal dust and combustible gas and the precautions for preventing gas and coal dust explosions shall be explained to all newly employed underground workers.

Section D. Safety Organization

1. If at all practical, a safety organization of officials and employees should be established.

2. Joint safety meetings of men and officials should be held monthly.

3. A safety committee, including workmen and officials, should make periodic inspections of the mine and submit recommendations for correcting the hazards observed.

Section E. Report of Accidents

1. The administrative office shall be notified immediately, whenever a gas or coal dust explosion, or fire, or an inrush of water into the mine occurs.

2. Whenever an accident occurs in or about any coal mine to any employee or person connected with the mining operation, resulting in death or injury, the owner of the mining right shall report the details to the administrative office on forms prescribed by the competent Bureau Chief.

3. The owner of the mining right shall keep a record of all lost-time accidents; these should be summarized monthly, as well as annually.

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ARTICLE 16 - ENFORCEMENT, REVIEW AND REVISION

Section A. Enforcement

1. The competent Bureau Chief, under the competent Minister, shall be the exclusive agency charged with the enforcement of this code (ordinance) and the correction of violations thereof.

Section B. Compliance

1. When non-compliance with this ordinance is found by the District Mine Inspector, it shall be reported immediately by him to the operating manager of the coal mine with a recommendation for the elimination or correction of such violation (setting a time limit for compliance). If compliance is not effected within the time limit set by the inspector, operation of the mine or section of the mine shall cease until compliance is met. Continued operation of a mine or section of a mine by any person or company that has been ordered closed by the District Mine Inspector shall be subject to a fine of ¥10,000 for each 24 hours that such operation has been continued after notice of closing has been ordered by the District Mine Inspector.

Section C. Review and Revision

1. From time to time, the competent Bureau Chief, upon request of an organization representing mine operators or representatives of labor organizations, review and revise the provisions of this ordinance. Such review and revision may be with respect to its general application, applications to types, conditions and methods of mining and mines, or application in specific cases.

2. Pending review and revision as herein provided, the competent Bureau Chief may suspend or stay, for such periods as he deems reasonable, the provisions of this code as applied to any mine or mines, when such suspension or stay is necessary in his opinion to carry out and comply with the purposes and provisions of this code.

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___ SGT MAJ

M-3-G

HEADQUARTERS I CORPS
APO 301 (Kyoto, Honshu)

EHN/wc

AG 458.25 - BA

12 February 1949

SUBJECT: Mine Safety Regulation

TO : See Distribution

1. Attached as inclosure 1 is translated copy of the Mine Safety Regulation for Coal and Lignite Mines, Mine Safety Division of the Ministry of Commerce and Industry, Japanese Government, which are forwarded for your information. The Japanese edition of the regulation was distributed by the Japanese Government to all mine inspectors, mine operators and labor unions, and will be used by them in making mine inspections under the emergency safety program which commences immediately.

2. Instructions concerning Military Government surveillance of the coal mine safety program will be published at a later date.

BY COMMAND OF MAJOR GENERAL COULTER:

C. C. CARTER
Colonel, AGD
Adjutant General

1 Incl:
Mine Safety Reg..

DISTRIBUTION:
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DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

MINE SAFETY REGULATION

FOR COAL AND LIGNITE MINES

Mine Safety Division

Ministry of Commerce and Industry

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CHAITER 1. GENERAL PROVISIONS

(Purpose of this Regulation)

Article 1. The purpose of this regulation is to provide a means of insuring safety in compliance with the Mine Safety Law (hereinafter referred to as the Law) in coal and/or lignite (Atan) mines.

(Definition of Terms)

Article 2. In this regulation the term "owner of mining right" refers to those persons who own the right of mining and also those who own the right of lease of the right of mining of coal (hereinafter construed to include sub-coal).

CHAPTER 2. SAFETY TECHNICAL OFFICIAL

(Appointment of Safety Supervisor and Assistant Safety Supervisor)

Article 1. In any mine usually employing over 150 mine workers, a safety supervisor shall be appointed by the owner of the mining right.

The chief of the Mine Safety and Inspection Bureau may, if he deems it necessary, order the owner of the mining right to appoint a safety supervisor in a mine usually employing less than 150 mine workers.

A safety supervisor or assistant safety supervisor shall not be appointed concurrently by the owner of the mining right to supervise more than two mines. However, this paragraph shall not apply to cases of special cause under the permission of the chief of the Mine Safety and Inspection Bureau.

(Qualifications of Safety Supervisor and Assistant Safety Supervisor)

Article 2. The safety supervisors and assistant safety supervisors will be appointed from among such persons who have passed the national examination, over 25 years of age and posses, in addition, any one of the following qualifications:

1. Graduate of a university stipulated by the School Education Law or a university or college stipulated by the former provisions and have specialized in the study of the technical phases of the work in which he is to be engaged, or who possesses an equal or superior learning in the technique. He must, in addition, have been employed in the operating phase of that work for a period of at least three years.

2. Graduate of a high school stipulated by the School Education Law or a technical school (A Class) stipulated by former provisions and have specialized in the study of the technical phases of the work in which he is to be engaged, or who possesses an equal or superior learning in the technique. He must, in addition, have been employed in the operating phase of that work for a period of at least five years.

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3. Those who have been employed in the operating phase of that work for a period of at least seven years.

The standard of learnings in item 1 and item 2 shall be stipulated by Ministrial information.

(Duties of a Safety Supervisor and Assistant Safety Supervisor)

Article 3. The safety supervisor or assistant safety supervisor shall take preventative or emergency measures without delay whenever he recognizes any risk of danger to safety.

(Appointment of Safety Boss)

Article 4. The owner of the mining right shall appoint the following Safety Bosses in compliance with this regulation:

1. Underground Safety Boss
2. Surface Safety Boss
3. Explosive Boss
4. Shot-fire Boss
5. Machinery Safety Boss
6. Electricity Safety Boss
7. Lamp Boss

A boss shall not be appointed so as to work concurrently for more than two mines or concurrently for more than three positions as a boss. However, this provision shall not apply to cases of special cause under the permission of the chief of the Mine Safety and Inspection Bureau.

(Qualifications of Safety Boss)

Article 5. The safety bosses shall be appointed from among such persons who have passed the national examination, over 20 years of age and posses, in addition, the following qualifications:

1. Graduate of a university stipulated by the School Education Law or a university or college stipulated by the former provisions and have specialized in the study of the technical phases of the work in which he is to be engaged, or who possesses an equal or superior learning in the technique. He must, in addition, have been employed in the operating phase of that work for a period of at least one year.

2. Graduate of a high school stipulated by the School Education Law or a technical school (A Class) stipulated by former provisions and have specialized in the study of the technical phases of the work in which he is to be engaged, or who possesses an equal or superior learning in the technique. He must, in addition, have been employed in the operating phase of that work for a period of at least two years.

3. Gradate of middle school stipulated by former provisions or who possesses an equal or superior learning in the technique, and, in addition, have been employed in the operating phase of that particular work in which he is to be engaged for a period of at least three years.

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4. Graduate of middle school stipulated by the School Education Law and, in addition, have been employed in the operating phase of that particular work in which he is to be engaged for a period of at least four years.

5. Graduate of first grade of ordinary elementary school or national school stipulated by the former provisions and, in addition, have been employed in the operating phase of that particular work in which he is to be engaged, for a period of at least five years.

As for the period of time provided in item 2 to 5 of foregoing paragraphs are to be read, at least one year for the case of the explosive boss and at least two years for the case of the lamp boss.

Article 6. In Class A mines the period of time provided in each item of paragraph 1, Article 2, and paragraph 1, Article 5 shall be the period of time in which he has been employed in the operating phase of that work at a Class A mine.

This provision shall not apply to cases of special causes under the permission of the chief of Mine Safety and Inspection Bureau.

(Underground Safety Boss and Surface Safety Boss)

Article 7. The owner of the mining right shall appoint an underground safety boss and a surface safety boss.

The underground safety boss and the surface safety boss shall work respectively under the direction of the safety supervisor or the assistant supervisor (or of the owner of the mining right for mines where safety supervisors are not appointed; the same shall be applied hereinafter), the underground safety boss shall attend to the safety underground and the surface safety boss shall attend to the safety on the surface, however, for those works which belong to other bosses are excluded from his duties.

The underground safety boss or the surface safety boss shall inspect daily all of the working places, roadways, machine rooms, storages for explosives, grease, oil and other hazardous materials, piles of gob or waste, reservoirs of mine water or waste water and other hazardous places. He shall also examine whether there is any risk of danger of falling roofs, explosion, fire, inrush of water, collapse or other hazards.

If he perceives any hazard or likelihood of hazard he shall without delay order the suspension of operations and traffic and take any other emergency measures, and place a danger sign and shall ask for the direction of the safety supervisor or assistant safety supervisor.

The underground safety boss or the surface safety boss shall leave his name with date at each place whenever he makes an inspection or examination. The condition at each place, the condition of maintenance of each equipment, measures taken for the prevention of hazard and its result and any message to the boss of the next shift shall be entered in a safety diary. This diary shall be submitted every day to the safety

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supervisor or assistant safety supervisor for his inspection.

In Class A and Class B mines an underground safety boss shall supervise no more than 70 mine laborers. However, this number can be increased in cases of special cause under the permission of the chief of the Mine Safety and Inspection Bureau.

(Explosive Boss)

Article 8. In a mine where explosives are used for mining, an explosive boss shall be appointed by the owner of the mining right.

The explosives boss shall, under the direction of the safety supervisor or assistant safety supervisor, supervise the transportation, storage and delivery of explosives in explosives delivery station.

(Shot-fire Boss)

Article 9. In a mine where blasting is used a shot-fire boss shall be appointed by the owner of the mining right.

The shot-fire boss shall, under the direction of safety supervisor or assistant safety supervisor, attend to the binding of a line and ignition of explosives and other matters pertaining to blasting. However, as far as the carrying and loading of explosives are concerned it may be entrusted with a qualified mine worker appointed by the owner of the mining right as provided in Article 17 of this chapter.

In Class C mines where the consumption of explosives during one month does not exceed 500 kgs. the shot-fire boss may, under the permission of the chief of the Mine Safety and Inspection Bureau, let a qualified mine worker who is appointed by the owner of the mining right, perform the work concerning blasting provided in this article and chapter 8.

(Machinery Safety Boss and Electricity Safety Boss)

Article 10. The owner of the mining right shall appoint a machinery safety boss and an electricity safety boss in case there are boilers, other prime movers, main fans for underground ventilation, hoisting equipment, and other machinery or equipment which need special attention from the safety point of view.

The machinery safety boss and electricity safety boss shall, under the direction of the safety supervisor or assistant safety supervisor, attend to the matters concerning safety of the machinery and equipment mentioned in the foregoing paragraph.

Machinery safety boss and electricity safety boss shall inspect every day whether there is anything abnormal in the machinery or equipment in paragraph 1 of this article.

The machinery safety boss and electricity safety boss shall perform a periodical minute examination on machinery and equipment which need special attention from the safety point of view.

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With regard to the foregoing two paragraphs, whenever anything abnormal is perceived, the machinery safety boss and/or electricity boss shall take adequate measures and ask for the direction of the safety supervisor or assistant safety supervisor.

The machinery safety boss or electricity safety boss shall leave his name with date at a place near each machinery or equipment whenever he makes an inspection. The condition of operation and maintenance, repair and suspension of operation of the machinery and equipment, measures taken for the prevention of hazard and any other important matters with regard to the machinery and equipment shall be entered into a safety diary.

(Lamp Boss)

Article 11. In cases when electric safety lamps or simple type inflammable gas detectors are used in underground a lamp boss shall be appointed.

The lamp boss shall, under the direction of a safety supervisor or assistant safety supervisor, inspect electric safety lamps and simple type inflammable gas detectors and also supervise the cleaning, delivery and receipt thereof.

The lamp boss shall observe each instruction given in the following items:

1. He shall inspect every part and assembled parts of the electric safety lamps and simple type inflammable gas detectors and shall deliver them only after ascertaining their soundness and after locking them.

2. The total number, the number in use, the condition of breakage and repair of electric safety lamps and simple type inflammable gas detectors and matters concerning inspection, cleaning, delivery and receipt thereof shall be entered into a safety lamp diary.

(Safety Guard)

Article 12. In Class A mines and in any other mine employing usually over 500 mine workers a safety guard shall be appointed by the owner of the mining right.

The chief of Mine Safety and Inspection Bureau may, whenever he deems it necessary, give orders to appoint the safety guard in mines employing less than 500 mine workers.

(Qualifications of Safety Guard)

Article 13. The safety guard shall be appointed from among such persons who have the qualifications as provided in article 2.

(Duties of Safety Guard)

Article 14. The safety guard shall assist the safety supervisor, give recommendations to the assistant safety supervisor and other bosses, with regard to matters concerning safety.

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The safety guard shall attend to matters concerning safety education provided in article 9 of the Law.

(Submitting of Reports)

Article 15. The report to be filed in compliance with the provision in paragraph 4, article 16 of the Law (including such cases where said provision is applied mutatis mutandis in paragraph 2, article 19 of the Law) shall be made in the Form No. , and submitted to the chief of the Mine Safety and Inspection Bureau.

Article 16. The report to be filed in compliance with the provision in paragraph 1, article 18 of the Law, shall be made in the Form No. and submitted to the chief of the Mine Safety and Inspection Bureau.

(Qualified Mine Worker)

Article 17. The owner of the mining right shall, in compliance with this ordinance, appoint qualified mine workers who are employed in works specially necessary from the safety point of view.

The basis and procedure for that appointment and qualification shall be provided in the safety rule.

(Extent of Duty)

Article 18. The owner of the mining right shall decide the extent of duty of each safety technical official and shall report it to the chief of the Mine Safety and Inspection Bureau.

CHAPTER 3. CLASSIFICATION OF COAL MINES

(Classification)

Article 1. Coal mines shall be classified into the following three classes:

1. Class A mine is one designated by the chief of Mine Safety and Inspection Bureau in which the content of inflammable gas in the air current in a split return air just prior to its mixing with other split return air amounts to 1.0 percent or more; or that in which the eruption of inflammable gas is liable or the liberation of dry dust coal is in excess.

2. Class B mine is one designated by the chief of Mine Safety and Inspection Bureau in which the content of inflammable gas in the air current at the same points as stipulated in the foregoing item amounts to less than 1.0 percent and over 0.5 percent; or that in which the liberation of dry coal dust is slightly in excess.

3. Class C mine is one other than Class A or Class B mines.

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(Application for Examption)

Article 2. In case a mine has been designated as Class A or Class B mine, whenever there is any circumstance which renders it impracticable to comply with some part of this regulation, an application stating reason thereof may be submitted within 30 days after the designation to the chief of the Mine Safety and Inspection Bureau, asking the exemption of that mine or part of that mine from the application of such part of this regulation.

CHAPTER 4. VENTILATION AND MINE GASES

(General Ventilation Installation)

Article 1. In any mine where underground working is carried out, ventilating installations for the purpose of supplying necessary amounts of air into underground for safety, shall be installed.

Article 2. In a mine where 50 or more persons work at a time in one pit, a measuring instrument for atmospheric pressure and a thermometer shall be installed in a suitable place near the opening of that pit.

(Intake and Return Airway)

Article 3. The intake airway and return airway shall be installed separately. However, this provision shall not apply when deemed not necessary, from the safety point of view, such as at the early period of development, under the permission of chief of the Mine Safety and Inspection Bureau.

(Main Fans)

Article 4. In Class A and Class B mines the ventilation (except the local ventilation) shall be performed by main fans.

The main fan shall be installed on the surface, not in the direction of the entry, in a fire-proof building located more than 7 meters from the pit-mouth, and shall be provided with an air duct of fire-proof construction which connects the main fan and the entry, and the air duct shall be provided with an explosion door or doors. The main fan shall be so located that the return air from the mine shall not be drawn into the air intake opening.

The main fan shall be provided with a self-recording pressure gauge or a water pressure gauge and, in addition, a recording tachometer or a self-recording ammeter for the main fan in a Class A mine.

Unless attended constantly, the main fan shall be provided with an automatic alarm device to give alarm when the fan slows down or stops.

The chief of the Mine Safety and Inspection Bureau may, when he deems it necessary, order to install an auxiliary fan or auxiliary prime mover.

Article 5. In Class A and Class B mines, the main fan shall be on a separate power circuit, independent of other underground circuits.

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Article 6. In Class A and Class B mines, the main fan shall be operated continuously unless under special cause.

When any risk of danger, due to a defect or stoppage of the main fan is perceived by the safety supervisor, the supply of electric current shall be cut off and the mine workers shall be withdrawn to a safe place.

When the main fan is to be started again after its failure or stoppage, the safety supervisor shall take proper measures for safety before the electric current is supplied and the mine workers are allowed to enter.

Details of the special cause in paragraph 1 and the standard of measures in the preceding two paragraphs shall be provided in the safety rule.

(Local Ventilation)

Article 7. In Class A and Class B mines, whenever local fans are in use provisions in the following items shall be observed:

1. The local fan shall be placed at a position where the return air shall not be drawn into the intake air, and the volume of air passing through that location shall be greater than the capacity of the fan, so as to prevent recirculation of air.

2. The local fan which is used to carry away inflammable gas shall be operated continuously.

3. When any likelihood of hazard due to the defect or stoppage of the local fan is perceived by the underground safety boss, the mine workers shall be withdrawn to a safe place and supply of electric current shall be stopped.

4. Whenever the supply of electric current has failed, switches provided to local fans and other electric machinery installed in that area shall be switched off.

5. When the local fan is to be started again after its failure or stoppage, the mine shall be examined by the underground safety boss for inflammable gas and only after assuring the absence of risk of danger, the local fan shall be started again.

6. When the local fan has been started again after its failure or stoppage, the mine shall be examined by the underground safety boss for inflammable gas and only after assuring the absence of risk of danger, the mine workers are allowed to enter.

7. When the local fan has been started again, if any hazard is likely due to the flow of inflammable gas, the underground safety boss shall supervise on the spot in order to drive away the inflammable gas by a safety method.

8. The tubing for the local fan shall be maintained in a good condition, by taking necessary measures, such as preventing the leakage of air, and the discharge end thereof shall be kept within 7 meters of the working face.

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(Volume of Intake Air)

Article 8. The volume of air at the opening of intake shall be determined by the maximum number of underground mine workers who work at a time during one day, and shall be more than 3 cubic meters per minute for each person for Class A and Class B mines. However, the chief of the Mine Safety and Inspection Bureau may increase or decrease this standard amount, if he deems it necessary in such cases when the liberation of inflammable gas or poisonous gas is in excess, or when it is necessary to control the volume of ventilating air for the prevention of spontaneous combustion.

(Velocity of Air Current)

Article 9. The velocity of air current in the mine shall be kept less than 450 meters per minute. However, they may be increased up to 600 meters per minute in a vertical shaft of an entry solely used as an air intake.

In cases of special cause, the velocity provided in the foregoing provisory clause may be raised further under the permission of the chief of the Mine Safety and Inspection Bureau.

(Coursing of Air)

Article 10. In Class A mines no return air from a long-wall working face, an area of working or an abandoned working face shall be passed through another working face.

Article 11. At a long-wall working face in Class A mines, no downward ventilation shall be applied. However, this provision shall not apply to cases of special cause such as when the pitching of the seam is very slight, under the permission of the chief of the Mine Safety and Inspection Bureau.

Article 12. Changes of main ventilation course shall be made only when no mine workers are in the mine, except those engaged in the work of changing the ventilation, and those appointed by the safety supervisor.

(Quality of Air)

Article 13. Air in which mine workers work or travel underground shall contain more than 16.0 percent of oxygen and less than 1.5 percent of carbon dioxide.

Article 14. Return air in a region of major split in Class A or Class B mines shall contain less than 1.5 percent of inflammable gas.

Article 15. When the return air from each split contains more than 1.5 percent of inflammable gas, except for cases provided in each item of article 16, mine workers shall be withdrawn from that dangerous area of the mine and the electric circuit shall be cut off by the underground safety boss until the dangerous condition is corrected.

Article 16. In cases which conform to any of the following items, the provisions in the preceding article shall not apply unless the content of inflammable gas reaches 2.0 percent.

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1. In cases where the return air from any area of split which is under working does not come in contact with the trolley wire of electric locomotives or other bare power wires, when a safety guard or safety boss in continually testing for inflammable gas during operation.

2. When bleeder entries or entries solely used for drawing gas from old workings to main return air are provided.

(Underground Temperature and Humidity)

Article 17. In places where the underground temperature is liable to exceed 38 degrees C the underground safety boss shall read, at least twice a month, the temperature and humidity at such places and the result thereof shall be recorded.

Article 18. The temperature at any underground working face shall be kept below 37 degrees C. However, this provision shall not apply to places wherein a work in connection with rescue of life or prevention of hazard is carried out.

(Stopping Wall and Doors)

Article 19. Stopping walls or doors shall be provided in any cross-cut connecting the intake shaft and return shaft or the main intake airway and return airway.

The stopping walls shall be built of substantial incombustible material which does not allow air leakage, such as concrete, concrete blocks or brick.

At least two doors shall be provided, keeping an adequate distance between each of them.

Article 20. In any mine the number of doors provided in a haulageway or main airway shall be more than two, each keeping an intervening distance sufficient to hold a mine car or a trip of mine cars.

The door shall be provided with either a self-closing device or a watchman shall be stationed at each door.

Article 21. In any mine where a main fan is used, the doors shall be kept closed, except when it is necessary to open.

Motor crews, haulage employees and other persons who open the doors shall be responsible for the closing thereof.

(Air Bridge)

Article 22. Air bridges shall be constructed tightly against air leakage and shall have sufficient strength to withstand possible fall of the roof.

(Local Ventilation by Brattice)

Article 23. When local ventilation is maintained by the use of brattice in an

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entry along the seam of coal, the length of the brattice from the nearest break-through shall be less than 90 meters.

However, this provision shall not apply when a local fan is used or when the ventilation is maintained by the tubing ventilation by the depression of the main fan.

The chief of the Mine Safety and Inspection Bureau may shorten the distance provided in preceding paragraph whenever he deems it necessary from the safety point of view.

(Abandoned Workings)

Article 24. Abandoned workings, where large quantities of inflammable gas or coal dust may exist, shall be filled, sealed or ventilated, or shall be dealt with by some other suitable measures.

When ventilated in compliance with preceding paragraph, the return air shall not pass through any operating place or roadway with frequent traffic.

(Examination for Inflammable Gas)

Article 25. The underground safety bosses working in Class A or Class B mines shall examine every day the content of inflammable gas in all live working places, by means of inflammable gas detectors and shall also enter the result of examination into the safety diary.

The examination provided in the preceding paragraph shall be made within three hours before the entrance of mine workers to the pit; moreover, such examination shall be made more than twice during a shift at each working face.

In Class C mines where more than 50 mine worker are employed at a time underground, the underground safety boss shall, at least once in every 15 days, examine the inflammable gas and the result of which shall be entered into the safety diary.

Article 26. In Class A and Class B mines, whenever an underground safety boss or a shot-fire boss goes underground, he shall carry an inflammable gas detector.

(The Report on the Detection of Inflammable Gas)

Article 27. In any Class C mine when more than 0.5 percent of inflammable gas is detected in the underground air current, a report to that effect shall be made to the chief of the Mine Safety and Inspection Bureau without delay.

(The Content of Inflammable Gas in Underground Workings)

Article 28. The content of inflammable gas shall be kept less than 2.0 percent at underground working places and less than 3.0 percent at underground passageways.

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Whenever the content of inflammable gas exceeds 2.0 percent, the operation shall be suspended immediately, mine workers shall be withdrawn from that dangerous area, the supply of electricity shall be cut off and a specific danger sign shall be posted at that place by the underground safety boss.

Whenever the content exceeds 3.0 percent, barriers or other devices to bar the traffic shall be installed at that place and no one except the bosses concerned or other authorized persons shall enter into that area.

However, notwithstanding the preceding two paragraphs, the operation concerning the improvement of ventilation may be carried out in that area, in a safe process under the personal supervision and direction of the underground safety boss and under the direction of the safety supervisor or the assistant safety supervisor.

The danger signs, barriers or other devices to bar the traffic provided in paragraph 2 and 3 shall be removed only by the safety bosses concerned under the direction of the safety supervisor or the assistant safety supervisor.

(Air Readings)

Article 29. In Class A mines, the underground safety boss shall measure the total volume of both intake air and return air every day, and the volume of both intake and return air of each split at an interval of less than 7 days. However, whenever anything unusual occurs to the ventilation or any change is applied to the ventilation system, the measurement of volume shall be made at each instance.

The record of the readings shall be entered into the ventilation book.

The provisions in the foregoing paragraph may be applied to Class B mines when deemed necessary by the chief of the Mine Safety and Inspection Bureau.

(Article 30. In a mine where 50 or more mine workers are employed in one pit at a time, the provisions in the following items shall be observed:

1. Besides entering these records provided in item 2, article 30, the underground safety boss shall read the measurement of those instruments provided in article 2 and paragraph 4, article 4 every day and shall enter the records into the ventilation book, and when anything unusual is perceived a report shall be made to the safety supervisor or assistant safety supervisor without delay.

2. The underground safety boss shall measure the volume of the air current by an anemometer and make examination for inflammable gas by a gas detector all over the mine at least once every 30 days. However, whenever anything unusual occurs to the ventilation or any change is made to the ventilation system, the measurement examination shall be made at each instance.

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3. The underground safety boss shall enter the records of measurement and examination in the preceding items into the ventilation book and safety diary respectively.

The provisions or part of the provisions in the preceding items may by applied to a mine which does not come under the stipulation in the foregoing paragraph, when deemed necessary by the chief of the Mine Safety and Inspection Bureau.

(Measures against Unusual Ventilation)

Article 31. In Class A and Class B mines, wherever anything unusual in the direction or distribution of ventilation is perceived by the underground safety boss, an adequate measure shall be taken without delay and the case shall be entered into the safety diary.

When a change in ventilation system is deemed necessary, he shall wait for the direction from the safety supervisor or assistant safety supervisor.

(Measures against Sudden Issue of Gas)

Article 32. In any place where the risk of sudden issue of gas is liable an adequate measure, such as to provide means for the withdrawal of mine workers and a disconnecting device for the power circuit, shall be provided beforehand.

When the risk of sudden issue of gas has been foreseen, the mine workers shall be withdrawn immediately to a safe place and adequate measures, such as disconnecting the power circuit, shall be taken at the same time.

(Administrative Procedures)

Article 33. The chief of the Mine Safety and Inspection Bureau may, when he deems it necessary, order necessary measures for ventilation, such as the change of system for split ventilation, opening of an airway, installation of a spare prime mover for main fan, installation of a spare fan, increasing the volume of air to a split ventilating area, or restricting the number of working faces or the number of mine workers working in one split ventilating area.

CHAPTER 5. DRY COAL DUST DISPOSITION

(Limit of Application)

Article 1. Provisions in this chapter shall apply to Class A and Class B mines.

In mines where the creation of dry coal dust is not in excess, a part or parts of the provisions in this chapter may not be applied, under the permission of the chief of the Mine Safety and Inspection Bureau.

(Prevention of Accumulation of Coal Dust)

Article 2. Dry coal dust shall not be permitted to accumulate in excess on the haulageways and other roadways.

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Coal dust accumulated on roadways, underground machine rooms and other places shall be cleared away and carried out of the mine.

Article 3. Adequate preventative means against excessive scattering or flying about of coal or coal dust shall be provided to machinery, instruments, equipment, or any other devices for transporting coal in the mine.

(Watering or Rock Dusting)

Article 4. At places mentioned in the following items where mining operations raise an excessive amount of dust in the air, water shall be sprinkled to settle the coal dust, or rock dust shall be used.

1. Working faces or roadways where dry coal dust is liable to rise.
2. Places where mining machinery raising dry coal dust are in use.
3. Loading end of the coal chute.
4. At underground dumps and on coal piles temporarily made.
5. Before and after blasting is applied to coal seam.
6. On the coal immediately before or after loading on mine cars, or on coal at other adequate places.

Article 5. Whenever rock dusting is applied in a working place, all roadways within 15 meters of the working face and the goaf areas close to the face of longwall workings shall be rock-dusted.

Article 6. Where rock-dusting is applied, it shall be distributed upon the roof, sides and floor of all open places and the content of the incombustible matter of the mine dust shall be maintained more than 65 percent.

When inflammable gas is present in the air current, the content of incombustible matter stipulated in the foregoing paragraph shall be increased one percent for each 0.1 percent of inflammable gas content.

When water is sprinkled, the water content of the mine dust shall not be less than 30 percent.

(Prevention of Propagation of Explosion)

Article 7. Rock-dust-shelves, rock dust zones or other proper installations shall be provided at roadways approaching each operating area and other necessary places in order to prevent the propagation of explosion.

Article 8. The rock-dust shelves shall be placed at a position higher than 2/3 of the height of the roadways from the floor and the clearance between the piled up rock-dust and the lower side of the beam of the roofing frame shall be kept more than 10 centimeters so as to distribute the rock-dust on the whole area of the roadway when it works.

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The amount of rock-dust to be piled on the shelf shall be more than 0.4 cubic meters for each square meter of the average cross-sectional area of the roadway.

(Duty of Underground Safety Boss)

Article 9. The underground safety boss shall visit places where dry coal dust is created or accumulates, and inspect the condition of coal dust disposition and preventative facilities for propagation of explosion every day, and shall enter the results of the inspection in the coal dust disposition book. When any unusual condition is perceived a report shall be made to the safety supervisor or the assistant safety supervisor without delay.

Article 10. The underground safety boss shall sample the mine dust which represents the result of rock-dusting at least once a month and shall examine the content of the incombustible matter and enter the result of the examination in the coal dust disposition book.

(Safety Rule)

Article 11. Matters pertaining to the process, standard and inspection for watering, distribution of rock-dust, and installation of rock-dust shelves or rock-dust zone, and matters with regard to the examination of the sample mentioned in the preceding article and the standard specification for rock-dust shall be prescribed in the safety rule.

CHAPTER 6. PREVENTION OF SPONTANEOUS COMBUSTION

(Preventive Installation)

Article 1. In locations where the danger of spontaneous combustion is liable, a fire extinguishing facility shall be provided, and supplies of fire resistant material and other necessary measures shall be provided, so as to make immediate sealing of such area possible, in case of necessity.

Abandoned workings where the danger of spontaneous combustion is likely to occur shall be filled up, sealed, or shall be provided with ventilation or other proper methods.

When abandoned workings where spontaneous combustion has occurred, or is likely to occur are sealed, an iron pipe shall be installed so as to examine the atmosphere behind the seal.

When ventilation is applied in compliance with paragraph 1, the return air shall not pass through any operating place or roadway with frequent traffic. However, the provision in the foregoing paragraph shall not apply when unavoidable causes exist, under the permission of the chief of the Mine Safety and Inspection Bureau.

Detailed rules with regard to preventive measures and disposition for spontaneous combustion shall be provided in the safety rule.

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(Sealing)

Article 2. When there is a rise of explosion in the case of sealing an area of spontaneous combustion or fire in the mine, the underground safety boss shall not commence a regular sealing before applying sand-bag sealing or other safety measures under the direction of the safety supervisor or the assistant safety supervisor.

(Examination)

Article 3. In places where danger of spontaneous combustion exists, temperature and humidity readings shall be taken and recorded frequently, and the presence of foul oddur shall be examined and recorded, also attention shall be paid to the changes thereof.

In sealed places where spontaneous combustion occurs or is likely to occur, the sealing shall be inspected whether there is anything unusual, and if necessary the atmosphere behind the seal shall be analyzed and recorded.

CHAPTER 7. PREVENTION OF FALLING OF ROOF AND WALLS

(Timbering)

Article 1. Timbering and other measures shall be applied in underground to prevent the hazard caused by falling of roof and walls.

Props and other necessary material for timbering shall always be prepared in a place convenient for operation.

A rational system of timbering suitable to the roof condition and mining method, and matters pertaining to the prevention of hazard due to the falling of roof and walls shall be provided in the safety rule.

(Examination of Roof and Wall)

Article 2. Diggers and other mine workers who work at a place where danger of fall is liable shall examine the roof, walls and working face before starting operation and shall make the place safe.

Article 3. Roof, walls, face and loose rocks at any operating place shall be tested at frequent intervals during operation and shall be made safe.

Every underground worker shall be instructed an adequate way for testing the roof and other places.

Article 4. The safety supervisor, assistant safety supervisor, safety guard and underground safety boss shall test the roof and other places in operating places, haulageways, manways and other places visited.

Article 5. The roof shall be examined carefully before props are removed.

When pulling down a loose rock, a suitable tool not less than 1.0 meters long shall be used to avoid any danger.

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(Maintenance)

Article 6. Broken or decayed props or other supports in operating places or roadways shall be replaced or strengthened as soon as possible.

Props removed for the operation of coal cu ting machine, loader or other machinery, or those knocked out by blasting shall be replaced as soon as possible.

Article 7. The recovery of timbers or props shall be carried out by experienced workers using suitable tools.

In places where the risk of danger is liable, the recovery in the preceding paragraph shall be carried out under the supervision of a safety boss.

(Strip Mining)

Article 8. In strip mining, provisions in the following items shall be observed:

1. To remove the earth which is liable to collapse
2. To remove loose rocks.
3. To maintain a safe gradient when removing loose rocks.
4. To provide necessary steps or maintain a safe gradient when digging gravel or other loose material.
5. To provide a fence or other adequate measure below the place of excavation in order to prevent the falling rocks, or provide a safe distance between the place of excavation and other operating places or roads.

CHAPTER 8. EXPLOSIVES AND BLASTING

(Limit of the Provision)

Article 1. When explosives are used for mining, provisions in this chapter shall be complied with besides those provisions in the enforcement regulations of Fire Arms and Explosives Control Law and the detailed enforcement regulations of the same law.

(Explosives Delivery Station)

Article 2. The owner of mining right who uses explosives in his mine for the purpose of mining shall install an explosives delivery station for the delivery of explosives besides the explosives storage magazine which is installed in compliance with the provision in article 28 of the enforcement regulation of Fire Arms and Explosives Control Law.

In case of installing an explosives delivery station stipulated in the foregoing paragraph, a permission of the chief of Mine Safety and Inspection Bureau shall be applied for.

Article 3. The delivery of explosives by the explosive boss shall be carried out in the explosives delivery station.

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When explosives are stored in explosives delivery station, the amount of them shall not exceed the estimated amount of one day's use.

Article 4. In an explosives delivery station, provisions in the following items shall be observed:

1. Containers to keep explosives shall be of substantial construction and shall have no iron or steel parts exposed on the inside surface.

2. Explosives shall be kept separately by each different kind.

3. The delivery station shall be kept clean, and shall not be entered without taking off soiled footwear.

4. Smoking, open flames, or inflammable materials shall be prohibited in or near the delivery station.

5. When portable lights are used, anything else than safety portable electric light shall not be used.

6. Tools other t an those necessary for the handling of explosives shall not be stored in the delivery station.

7. No one except the boss concerned or mine workers in charge of that work shall enter the delivery station.

8. At an easily visible place in the station, bulletins showing the rules and notices concerning the handling of explosives shall be posted.

(Surface Explosives Delivery Station)

Article 5. When a surface explosives delivery station is provided, it shall be installed in pursuance of provisions in the following items:

1. The location of an explosive delivery station shall be in a safe position in consideration of mine openings or buildings occupied by any person or persons.

2. The station shall be of one-storied buildings constructed of incombustible material or covered with fire-resistant material.

3. The height of the floor s all be more than 0.3 meters.

4. No iron or steel shall be exposed in the inside surface.

5. Ventilation facilities shall be properly provided.

6. The station shall be constructed with means against robbery.

7. When equipped with lighting, no lighting except fixed in electric light with safety device shall be used.

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8. When equipped with heating facilities, no heating system other than hot water or steam heating shall be used.

9. The station shall be provided with danger signs marked "EXPLOSIVES, KEEP OFF!"

(Underground Explosives Delivery Station)

Article 6. The installation of an underground explosives delivery station shall be made in pursuance of provisions in the following items:

1. The location shall be in a comparatively dry and safe place at least 8 meters from haulageway, trolley and power lines.

2. Rock-dust shall be ap lied amply in places around the explosives delivery station.

3. Devices to prevent the falling of roof shall be provided.

4. The detonators and explosives shall be kept separately.

(Duties of Explosive Boss)

Article 7. An explosive boss shall observe the provisions of each of the following items:

1. In each case of the delivery of explosives he shall make entry of required items into the explosives delivery book of form No. , and shall keep the balance clear.

2. When he receives explosives from an explosive manager appointed in pursuance of Fire Arms and Explosives Control Law, (hereinafter called as explosive manager), he shall make application to the explosive manager making entry of required items into the application of sheet form of Form No. . However, the amount applied for shall not exceed the estimated amount of one day's use.

3. He shall make entry of the kind and amount of explosives into the explosives transfer sheet, when there exist any balance at the time of changing shift. The A slip shall be given to the explosive boss of the next shift together with the balance of explosives and the B slip shall be delivered to the explosive manager.

4. He shall make entry of the kind and amount of explosives on hand into the explosives return sheet, when there is no need to use explosives for a period of more than one day due to operation convenience or when operation is to be suspended. This sheet shall be given to the explosive manager together with the explosives on hand.

5. He shall not deliver explosives to anyone other than the shot-fire boss.

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6. The amount delivered shall not exceed the estimated amount to be used by that shot-fire boss during one shift of operation.

7. When defrozing frozen dynamite and other nitroglycerine explosives, it shall be done in a safe method, such as keeping in a heated explosives delivery station or heating them in tepid water in such a way not to make the explosives touch water. Dangerous methods such as nearing them to fire or bringing them in touch with live steam or steam pipe shall be prohibited.

In order to supervise the handling of explosives, the explosive boss may examine at any time the belongings of the shot-fire boss or other mine workers at the portal of mine or other proper places.

Article 8. All books, application sheets and return sheets mentioned in item 1 to 4 paragraph 1, of foregoing article shall be kept for three years.

(Underground Transportation)

Article 9. When explosives are transported to an underground explosives delivery station by cars or cage, provisions in the following items shall be observed:

1. The container shall be of substantial construction of non-conductive material and shall have no iron or steel exposed on the inside surface.

2. The container shall be locked unless it is sealed.

3. Explosives shall be kept separately by each kind in a separate container.

4. The explosives shall be watched by a guard and a suitable sign shall be provided on the cage or cars.

5. Dynamite, other nitroglycerine explosives and detonators shall be carried by man-cars or special cars. Explosives and detonators shall be loaded on separate cars.

6. When transported by man-cars or cage, explosives shall not be carried together with other material or human beings.

7. In cases of item 5 and 6, cars or cage shall be handled at low speed and special attention shall be paid for its operation.

8. Transportation by man-car or special car shall be carried out on off-shift or between shifts.

(Temporary Storage)

Article 10. When explosives or detonators are stored near the working faces in containers, provisions in the following items shall be observed:

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1. The containers shall be the same construction as those in item 1 of the foregoing article, and shall be locked.

2. Tools and other things shall not be put in the container mentioned in foregoing item.

3. Detonators shall be stored in a container or containers at least 3 meters from the container of explosives.

4. The container shall be placed at a position at least one meter from tracks or power lines.

(Stemming Bore Hole)

Article 11. Those who use explosives shall be supplied with clay or other incombustible material and wooden or bamboo tamping bars for stemming bore holes, or sand stemming apparatus shall be used.

(Duties of Shot-fire Bosses)

Article 12. A shot-fire boss shall observe the provisions of each of the following items:

1. The amount of explosives he makes application to the explosive boss shall not exceed the estimated amount to be used in one shift.

2. When explosives are left at the end of one shift, those shall be returned to the explosive boss immediately.

3. Dynamite and other nitroglycerine explosives shall not be used in a frozen state.

4. Detonators shall be fixed to explosives at a safe place removed from tracks, trolley wires, power lines, other electrical installations or conveyors.

5. When electric detonators are used, the leg wires shall be kept twisted until ready to connect to the firing cable.

6. When shots are to be fired the content of inflammable gas shall be measured by a gas detector for an area of at least 5 meters around that spot each time before firing the shots and also the hazard of coal dust shall be examined. However, when electric firing system is used, the measuring of inflammable gas shall also be made at the igniter or battery.

7. Blasting shall not be fired when the content of inflammable gas is more than 1.0 percent. However, this provision shall not be applied when electric firing system (hereinafter this does not include the firing system which use delayed action electric detonators) is used in a place where the inflammable gas content is less than 2.0 percent.

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8. In places where dry coal dust exists in excess, no blasting shall be fired unless it is made safe by distribution of rock-dust or sprinkling of water.

9. The position, condition and depth of the bore hole shall be examined before charging last th re should be any misfiring or other danger.

10. Stemming shall be invariably applied to bore holes for blasting.

11. Material or tools other than supplied, in pursuance of provisions in the preceding article shall not be used as stemming material and tools for charging explosives.

12. Before firing a shot, specified watchmen shall be stationed at roadways to the danger area and provisions ahll be made not to allow any person who has no business with the blasting to enter that area. Warning shall be given to let everyone near that area know the place of blasting, and only after ascertaining that it is clear of danger the shot shall be fired.

13. When there exists the danger of dry coal dust or creation of inflammable gas at the time of blasting, no more than two shots of blasting shall be fired at the same time in one place, unless by the electric firing system.

14. When blastings are fired successively in adjacent places, it shall be fired from the lee side. However, this provision shall not apply to steep pitch long wall working systems under the permission of the chief of Mine Safety and Inspection Bureau.

The provision of item 6, in the foregoing paragraph shall not apply in Class C mines.

(Blasting Cable)

ARTICLE 13. Blasting cable shall be laid in pursuance of provisions in the following items:

1. Shall be insulated and at least 30 meters long. However, in a working face of long wall system this can be at least 15 meters long.

2. Shall be short-circuited at the battery end until ready to be fired.

3. At the end to be connected to the detonator leg wires the two wires shall be kept staggered in length so as to prevent short circuit.

4. When laying the blasti g cable it shall be kept clear of power line and all other sources of active or leakage current.

(Misfires)

Article 14. When misfires occur the shot-fire boss in charge shall behave in pursuance of provisions in the following items:

1. When electric firing system is used, the blasting cable shall be disconnected from the igniter and short-circuited, and measures shall be taken not to let firing possible.

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2. A waiting period of at least 5 minutes shall elapse before approaching the place where explosives have been charged.

3. When delayed action electric detonators are used, the same measures as in the preceding item shall be taken, but a waiting period of at least 15 minutes shall elapse before approaching the place where explosives have been charged.

4. When fuses are used, a waiting period of at least 15 minutes shall elapse before approaching the place where explosives have been charged.

Article 15. When misfired charges exist, proper measures in pursuance of provisions in any one of the following items shall be taken with the attendance of a shot-fire boss in charge:

1. Misfired explosives shall be recovered by firing a blasting at a point at least 0.3 meters in case of hand boring and at least 0.7 meters in case of mechanical boring from, and parallel to, the misfired hole.

2. Misfired explosives shall be recovered by washing the stemming and charge from the bore hole with a stream of water from a rubber hose.

3. Blasting shall be fired with new charge after the stemming has been washed out by a stream of water or compressed air from a rubber hose.

When the shot-fire boss in charge cannot perform any of the preceding measures he may transfer the work to the boss of the next shift if unavaidable causes exist.

(Measures to be Taken After Blasting)

Article 16. After the blasting has been finished, provisions in the following items shall be observed by the shot-fire boss.

1. The condition of inflammable gas and coal dust, falling of roof and other hazards shall be examined by visiting places where explosives were charged. Whenever danger or likelihood of danger is perceived entrance of the mine workers to that area shall be prohibited immediately and a report shall be made to the underground safety boss.

2. The shot-fire boss shall enter the following items by each place of blasting into the blasting diary:

   a. The kind and amount of explosives he received and returned in pursuance of item 1 and 2 of article 12 and the result of measurement and examination in accordance with item 6 and 9 of article 12.

   b. The number of blastings made.

   c. The kind and amount of explosives, detonators and fuses used in each bore hole.

   d. The system of firing.

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e. The measures taken on cases of misfire.

f. The result of inspection and measures taken in pursuance of the preceding item.

g. The name of assistant whenever used.

Examination of inflammable gas and coal dust mentioned in item 1 shall not apply to class C mines.

(Restriction for Use of Explosives)

Article 17. In an operating place where the content of inflammable gas is apt to exceed the normal contant at that place, the safety supervisor or assistant safety supervisor shall direct the shot-fire boss to work in pursuance of provisions in one of the following items in spite of those provisions in item 7 of article 12, and article 1 and 2 of chapter 14.

1. Only the kind and amount of explosives or the kind of detonators, fuses and igniter specified by the safety supervisor or assistant safety supervisor shall be used.

2. Explosive safety sheaths shall be used.

3. Explosives shall not be used.

(Safety Rule)

Article 18. Detailed rules with regard to the handling and use of explosives shall be provided in a safety rule.

CHAPTER 9. TRANSPORTATION

(Brakes)

Article 1. Shaft hoists and slope hoists shall be equipped with brakes capable of stopping the fully unbalanced cage or skip, or train of cars at any point in the shaft or slope.

(Signal Equipment)

Article 2. Unless audible signaling can be relied upon, a signal equipment shall be provided in shafts equipped with hoist, in entries equipped with self-acting hoist, hoist or endless-rope hoist. At least two methods of signaling, one of which is the audible type, shall be provided in a shaft equipped with hoist used for handling men and between all landings in a slope and the hoist room. However, a telephone is deemed as an audible system of signaling.

(Prevention for Runaways)

Article 3. When cars are hauled by self-acting hoists, hoists or endless-rope hoists in a slope, devices to prevent runaways shall be provided at the top of slopes, inclines and bottom of slopes.

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(Shaft Hoists Used for Handling Men)

Article 4. When a hoist is equipped in a shaft for handling men, provisions in the following items shall be observed:

1. A position indicator shall be provided.

2. Equipment to prevent dangers of over-winding and overspeed shall be provided.

3. Self-closing or manually controlled safety gates shall be equipped at the pit-mouth and all intermediate landings.

4. At the bottom and intermediate landings, a "run-around" shall be provided for passage from one side of the shaft to the other.

5. The cage shall be provided with a steel bonnet and also the side of the cage shall be enclosed to prevent any one from falling down. At both ends of the cage, gates, safety chains or cross-bars shall be provided.

6. Hand holds or chains shall be provided for men on the cage to maintain their balance.

7. Bridle chains shall be provided between the rope and cage.

8. The rope and attachments which support the cage shall have adequate size to withstand ten times the maximum static load and five times the maximum of total load. However, when provided with equipment preventing the danger caused by breakage of rope, a rope which would withstand eight times the maximum static load and four times the maximum total load may be used, under the permission of the chief of Mine Safety and Inspection Bureau.

9. The static load mentioned in the preceding item shall be defined as the sum of the weight of the cage, rope and load on the cage, and the total load shall be defined as the sum of accelerated load of the static load and the bending load exerted on the rope.

10. No joined rope shall be used.

11. A rope shall not be used when inspection indicates a dangerous amount of corrosion or distortion, or when wires in crown of strand are worn to less than 65 percent of their original diameter.

12. The signal code shall be posted prominently in the hoist room in easy sight of the operator and at all landings where signals are provided.

13. The number of men allowed on a cage shall be stipulated in the safety rule and shall be posted at all landings.

(Hoists in Slopes Used for Handling Men)

Article 5. When a hoist is equipped in a slope for handling men, provisions

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in the following items shall be observed besides those provisions in item 1, 2, and 10 through item 13 of preceding article:

1. The height of the haulageways shall be at least 2 meters above the track surface and the width thereof shall be wide enough to leave a clearance of at least 0.75 meters at one side and of at least 0.30 meters at another side between the man-car and the side wall. However, the provision about height shall not apply when covers are provided to man-cars and a clearance of at least 0.3 meters is left between cover of man-car and beams of ceiling, and that about width shall not apply when side enclosures are provided and a clearance of at least 0.3 meters is left between the man-car and the side wall.

2. An emergency car shall be coupled to man-cars or some other runaway preventive devices shall be provided.

3. A bridle chain shall be provided between the rope and emergency car.

4. Man-cars shall be provided with safety ropes or chains connected to main rope at a point above the rope-socket and extending around or through all cars.

5. The rope and attachments which support the man-cars shall have adequate size to withstand ten times the maximum static load and five times the maximum total load. However, when provided with equipment preventing the danger caused by breakage of rope, a rope which could withstand eight times the maximum static load and four times the maximum total load may be used, under the permission of the chief of the Mine Safety and Inspection Bureau.

6. The loads mentioned in the preceding item shall be computed according to item 9 of preceding article by using the component force along the incline and adding the frictional force to them.

Provisions in item 1 shall be applied to haulageways where tracks for locomotives which handle the transportation of men are provided.

Provisions in item 1, paragraph 1 shall not apply to such special cases where man-cars pass through a dam for prevention of in-rush water or sealing for spontaneous combustion, when the permission of the chief of the Mine Safety and Inspection Bureau is received.

(Car-Men)

Article 6. A car-man who is in charge of the supervision of man-cars (include cages used for handling men, the same hereinafter) shall be appointed by the owner of the mining right from among the underground safety bosses (or surface safety bosses for cases on the surface) and machinery safety boss.

(Operators of Man-car Hoists and Other Personnel)

Article 7. When hoist for handling of men are equipped, operators of the hoist, guards and attendants shall be appointed by the owner of the mining right in pursuance of article 17 of chapter 2. The operator of the hoist shall not leave his post while mine workers are in the mine.

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The guard shall accompany each man trip and shall supervise signals and other matters relating to man-cars. The car-men and attendants shall supervise the riding and getting off of mine workers to and from the man-cars at each landing at the beginning and end of each shift.

(Running Speed of Man-cars)

Article 8. Man-cars shall be operated at a safe speed consistent with condition of track and equipment.

(Trial Operation of Man-cars)

Article 9. At the beginning of each shift and when starting the hoist after it has not been used for some time, the hoist operator shall conduct a trial operation of the cage or man-cars at least once before hoisting or lowering mine workers. However, this provision shall not apply when a car-man accompanies the trip of slope winding.

(Prohibition of Carrying Men and Tools, etc. Together)

Article 10. When shaft hoists are used, machinery, tools, materials and cars shall not be carried in the cage with men. However, this shall not apply to personnel or mine workers who are necessary to attend the transportation of that machinery or equipment.

(Getting on and off a Man-car)

Article 11. Men shall not get on or off man-cars until they come to a full stop.

(Safety Rule with Regard to Man-Car)

Article 12. When a hoist is equipped for handling men, or tracks are laid for locomotives to transport men, provisions relating to the transportation equipment, equipment in that haulageway, supervision and operation shall be stipulated in the safety rule.

(Hoists not Handling Men)

Article 13. When a hoist which does not handle men is equipped, the rope and attachments which support the cage, skip or mine-car shall have adequate size to withstand six times the maximum static load and three times the maximum total load. Provisions in item 9 or article 4 and item 6 of article 5, shall apply for the computation of loads in the foregoing paragraph.

(Locomotives)

Article 14. Locomotives shall be equipped with tools for re-railing locomotives and cars. Locomotives shall be equipped with an audible warning device and head lights.

Article 15. Trolley locomotives shall not be operated in a back-pole state. However, this shall not apply to places where the trolley pole cannot be reversed, or when going up steep grades or running at very low speed.

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(Prohibition of Pushing the Cars)

Article 16. When locomotives are used in main haulageways the train of cars shall not be pushed except when cars are pushed from side tracks.

(Prohibition of Coupling or Uncoupling While in Motion)

Article 17. Cars shall not be coupled or uncoupled while the train is in motion unless automatic couplers are used.

(Places to Stop Cars)

Article 18. Train of cars shall not be left standing where it may obstruct the ventilation current.

(Indication Light of Train)

Article 19. When a train is operated by a locomotive or main hoist, an indication light shall be provided on the other end of the train from the locomotive side or rope-socket side.

(Prohibition of Riding on Cars)

Article 20. No person other than the personnel or workers in charge shall ride on cars, except man-cars.

The chief of the Mine Safety and Inspection Bureau may, if he deems there are unavoidable causes, not apply the provision of the foregoing paragraph for a specified period of time.

Operator and other workers in charge shall not get on or off the locomotive or train while in motion. However, this provision shall not be applied to assistant operator or other workers who get on or off the locomotive or train from the necessity of operation while at low speed.

(Inspection)

Article 21. The machinery safety boss shall inspect the hoisting equipment for its brakes, emergency cars, rope, links, chains, rope-sockets and cages every day, and shall inspect the safety catch of the cage at least once in a period of two months. The results of these inspections shall be entered into the safety diary.

CHAPTER 10. ROADWAY AND TRAVELWAY

(Connecting Roadways)

Article 1. In mines where more than 50 mine workers are employed at a time, there shall be at least two roadways which connect each other at the face region and also connect separately to the surface.

The roadways mentioned in the preceding paragraph shall have adequate distance between them and shall be maintained to give no obstructions to traveling.

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The preceding two paragraphs apply for branch pits where more than 50 mine workers are employed at a time.

Provisions in the preceding three paragraphs shall not be applied when a shaft slope or entry is under development, under the permission of the chief of the Mine Safety and Inspection Bureau.

When it is deemed necessary by the chief of the Mine Safety and Inspection Bureau, provisions in the first through the third paragraph shall be applied to mines employing less than 50 mine workers at a time.

(Emergency Ladderway)

Article 2. In a shaft or a slope which has an inclination of more than 40 degree an emergency ladderway shall be equipped, unless any travelable passageway to the surface is provided beside the hoisting equipment.

(Prohibition of Passage in Roadways with Tracks)

Article 3. Roadways installed with tracks for self-acting hoists, hoists, endless rope hoists or locomotives shall not be used for traveling at normal case. However, this provision shall not apply when a footpath is provided on the side of the track or when shelter holes with white marks or green electric lights are provided at adequate intervals, under the permission of the chief of the Mine Safety and Inspection Bureau.

When it is deemed necessary by the chief of the Mine Safety and Inspection Bureau, he may give orders for the installation of a travelway in spite of the provisory clause of the preceding paragraph.

When shelter holes, such as mentioned in the above provisory clause, are provided, if it is deemed necessary by the chief of the Mine Safety and Inspection Bureau, he may give orders for the installation of a footpath on the side of the track.

(Clearance and Shelter Holes)

Article 4. A clearance of at least 0.75 meters at one side, and of at least 0.30 meters at another side of the roadway shall be kept between the side wall and the locomotives, mine cars, conveyors or other obstructions. However, this shall not apply for cases where shelter holes are provided at adequate intervals.

Article 5. A shelter hole at least 3 meters deep and 2 meters high shall be provided at the bottom landing of a slope and at the turn out.

(Over Bridges)

Article 6. At places where a conveyor is to be crossed, an over bridge shall be provided if the conveyor is wide or the roof at that place is so low as to cause danger.

(Prevention of Falling of Rocks, etc)

Article 7. In a shaft or a slope of 40 degrees or over, which is under

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development, an adequate device to prevent dangers which may be caused by the falling of rocks or earth shall be provided.

(Prevention of Falling of Men)

Article 8. In a shaft or a slope of 40 degrees or over, a cover, barrier or other safety device to prevent the falling of men shall be provided at the pit mouth and at each place where other roadways meet that shaft or slope.

Men shall be supplied with safety ropes, or other safety means shall be provided, when they work in a shaft or a slope of 40 degrees or over, when they work on a test-boring headframe or on a supporting frame of the aerial ropeway.

Article 9. An unused shaft or slope of 40 degrees or over shall be closed at the opening or other safety device against falling shall be provided.

(Close of Passage)

Article 10. For the purpose of prohibiting the entrance of unauthorized persons to unused roadways or abandoned workings, danger signs shall be posted and barriers or other devices to prevent passage shall be provided at those places.

(Ladderways)

Article 11. The ladderway equipped in a shaft or slope of 40 degrees or more shall be of substantial construction and shall be equipped in pursuance of the provisions in the following items:

1. The ladderway shall be kept at an adequate distance from the wall, with an inclination less than 80 degrees.

2. A foot shelf shall be provided at least every 10 meters. However, this may be omitted if the ladderway is less than 15 meters.

3. To keep safe in ascending or descending a ladderway, an adequate device, such as to have the upper end of it to project 0.6 meters or more, shall be provided.

4. In a shaft or slope where hoisting equipment is installed in addition to a ladderway, a partition or a separating wooden wall shall be provided.

5. Steps of the ladderway shall be provided at a constant pitch.

6. Adequate measures shall be taken to prevent the ladderway from displacement.

A temporary and emergency ladderway may be installed, not in pursuance with provisions in the preceding items.

(Direction Signs)

Article 12. Direction signs and name of roadways shall be posted at every turning to another roadway and also the direction of the exit shall be posted.

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(Prohibition to Entrance)

Article 13. Places wherein operation or entrance is prohibited on account of prevention of danger shall not be entered by any person, except the underground safety boss concerned, and authorized persons.

CHAPTER 11. ELECTRICITY

(Limit of the Provision)

Article 1. The installation and supervision of electrical installations in underground shall be carried out in pursuance of the provisions in this chapter, in addition to the provisions in the Enforcement Regulation for Electrical Installation of Private Use and the Electrical Installation Rule.

(Installation Restriction)

Article 2. No electrical installation shall be installed at any place where the content of inflammable gas is in excess of, or likely to exceed the amount specified by the chief of the Mine Safety and Inspection Bureau.

(Suspension of Electric Supply)

Article 3. The supply of current to any area shall be cut off immediately by the underground safety boss, when the content of inflammable gas in that area exceeds the amount prescribed in article 15 of chapter 4.

When the supply of current to the whole pit is to be cut off, the boss in charge shall, beforehand, receive permission from the safety supervisor or assistant safety supervisor.

When supplying the current again after a stoppage to any area mentioned in the preceding two paragraphs, the boss in charge shall receive permission from the safety supervisor or assistant safety supervisor and shall supply the current only after giving notice to other bosses concerned and ensuring the absence of any risk of danger of inflammable gas or electric shock.

When there is any accidental stoppage of the current underground, the boss or qualified mine worker in charge shall report it immediately to the safety supervisor or assistant safety supervisor.

(Transformer Equipment)

Article 4. The major transformer stations and high-potential switchboard stations underground (including storage battery charging stations, motor generators and other rectifying equipment) shall be of fire-proof construction and shall be provided with a self-closing door.

When any electrical equipment filled with inflammable oil is used, a sufficien quantity of sand shall be laid on the ground to absorb the oil which may leak out and to prevent the risk of fire.

When practicable, stations or equipment mentioned in paragraph 1 shall be located in an independent split of air current.

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Article 5. Portable or temporary underground transformers shall be located at a well-ventilated place of fire preventive construction.

Article 6. Danger signs shall be posted on all transformers, high-potential switchboards and other high-potential electrical installations.

Article 7. Switchboards underground shall be located in a place which provides sufficient space on both sides of the equipment to permit the boss or other authorized persons to inspect, adjust or repair the apparatus, and the place shall be sufficiently illuminated.

(Underground Circuits)

Article 8. For underground circuits, electric wire or cable in pursuance of the following items shall be used:

1. In Class A or Class B mines, cable or rubber sheathed cord shall be used for lighting, signal and telephone circuits, and when the use of insulated copper wire of Class No. 4 is inevitable, it shall be mounted on insulators and so installed as not to touch rocks or timbers. However, insulated wire of Class No. 3 may be used when the potential between the earth is less than 55 volts.

2. Armored cable shall be used for power circuits, except in cases in the following items:

   a. When rubber sheathed cable of Class No. 3 or better quality is used as low-potential power circuit for movable equipment, or as high-potential power circuit of less than 600 volts for movable equipment, as in the case of coal cutters where there is the risk of the cable getting damaged; and also when rubber sheathed cable of Class No. 2 or better quality is used.

   b. When insulated wire of Class No. 2 is used as feeder wire for electric locomotives in a place higher than 2 meters above the rail surface in an entry solely used for electric locomotive trackways.

3. All circuits shall be protected against lightning and power surges by lightning arrestors or other protective devices at the pit-mouth.

Provisions in this article shall not apply to cases of special cause under the permission of the chief of the Mine Safety and Inspection Bureau.

Super-high-potential circuits shall be installed under a special design approved by the chief of the Mine Safety and Inspection Bureau.

Article 9. A section switch or switches shall be provided in underground circuits in order to cut off immediately the electric supply to any place where eruption of gas or other emergencies have occurred.

Section switches shall be provided in high-potential circuits at each of the supply ends, receiving ends, branch points and other necessary points.

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Article 10. A joint box, branch box, or end box of metallic construction shall be provided respectively at each joint point, branch point or end point of a cable circuit.

Article 11. When a cable circuit is laid underground in the earth the location shall be indicated prominently.

Article 12. The supply of power to any area where the operation is in suspension shall be cut off. However, this provision shall not apply to the circuits used for the operation of pumps and local fans.

Article 13. Power shall be disconnected when repair work is to be done on energized parts of an electric installation.

Article 14. When repair work or inspection is being carried out after disconnecting the power, measures to prevent the danger of closing the circuit while the work is under way shall be taken, by locking or tying the switch and also a sign or signs indicating the stoppage of current on account of repair work or inspection shall be posted.

(Power Circuit for Electric Locomotives of Overhead Trolley System)

Article 15. Trolley and feeder wires underground, and those which are directly connected with underground trolley and feeder wires shall be installed in pursuance of the provisions in the following items:

1. The trolley wires shall be installed at least 1.8 meters above the rail surface.

2. The trolley and feeder wires shall not touch electrically the roof, side walls, ventilation doors and props.

3. The trolley wires shall be guarded on both sides of the ventilation doors.

4. Circuit breakers or switches shall be provided at the pit-mouth and at each of the major branch points of the circuits.

5. Hangers at curved parts of the trackway shall be adequately spaced so that the trolley wire shall not sag.

6. Each hanger shall be insulated at a point not more than 0.6 meters of the trolley wire and shall be anchored securely.

Article 16. The rails for electric locomotives of single trolley wire system shall comply with the provisions in the following items:

1. Unless welded joints (including welded fish plates) are used, the rails shall be electrically connected by bare twisted copper wire of more than 80 square millimeters or other bonds of equal or higher conductivity, and also an auxiliary return circuit shall be provided.

2. The return circuit and cross-bonds shall have an adequate conductivity and rails on both sides shall be connected at least at one point for every 10 joints of the rails.

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3. The contact resistance of a bond shall be less than the resistance shown in a length of 3 meters of the rail used with that bond.

Article 17. The rails when used as a return circuit, shall be insulated from other rails and metallic pipes in order to prevent leakage of current.

(Grounding)

Article 18. Metallic conduits and metallic covering or armor of cables underground shall be made electrically continuous to afford a main ground circuit.

The grounding of the main ground circuits shall be in accordance with the specification of Class No. 1 of grounding construction work.

Article 19. The metallic frames or casings of electric machinery and tools used underground shall be grounded and the grounding shall be in accordance with the specification of Class No. 1 of grounding construction work.

Article 20. In order to prevent the contact between high and low-potential circuits, transformers installed underground shall comply with any of the provisions in the following items:

1. The neutral point of the low-potential side or one line of the low-potential side shall be grounded.

2. The non-magnetic metallic plate preventing the contact of coils provided between the primary and secondary coils shall be grounded.

The ground mentioned in each item of the preceding paragraph shall be in accordance with the specification of Class No. 1 of grounding construction work.

Article 21. Underground metallic pipe lines and rails shall be electrically continuous and shall be grounded at intervals not exceeding 150 meters.

Article 22. The voltage of the current used for portable electric equipment or tools, such as coal drills, shall be less than 250 volts, and the metal frame thereof shall be grounded.

(Safety Devices)

Article 23. Electrical equipment or tools and electric circuits shall be provided with automatic overload safety devices at adequate places. However, a fuse immersed in oil shall not be used except for a potential transformer.

Article 24. The operating switch of a local fan shall be provided with a low-voltage relay in order to prevent the fan from starting automatically when the current is supplied again after stoppage thereof.

Article 25. Telephone circuits shall be protected against lightning and the current from lighting or power circuits by fuses and lightning arrestors or other suitable devices.

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(Illumination)

Article 26. In Class A and Class B mines no portable lights other than electric safety lamps shall be used.

In class A and Class B mines where the liberation of inflammable gas occurs or is likely to occur, no stationary lighting other than stationary electric lamps with safety devices shall be used.

Whenever deemed necessary by the Chief of the Mine Safety and Inspection Bureau, the kind of electric lamps to be used and the places to install stationary electric lamps in Class A and Class B mines be restricted.

Article 27. When electric safety lamps are used underground, the provisions in the following items shall be observed by the users:

1. The cover of the storage battery and the glass cover of the bulb shall not be opened.

2. When a lamp has been damaged or found defective, it shall, without delay, be exchanged for one in good condition at a watch station or other places where spare lamps are provided.

(Use of Measuring Instruments)

Article 28. When an "earth-tester" or "meggar" is to be used in a place where the danger of gas exists, it shall not be used unless the safety is assured by getting in touch with the underground safety boss and making certain of the result of gas detection at and around that place.

(Workers in Connection with Electrical Works)

Article 29. The construction work, maintenance and repair in connection with electricity shall not be done by workers other than those appointed by the owner of the mining right, in compliance with article 17 of chapter 2.

(Safety Rule)

Article 30. Provisions with regard to the construction work and supervision in connection with electrical installations shall be provided in the safety rule.

CHAPTER 12. FIRE FIGHTING AND PREVENTION

(Fire Fighting Devices)

Article 1. Fire fighting devices shall be provided at a place near the pit mouth underground in office rooms and other necessary places.

Fire prevention measures and fire fighting devices shall be provided in underground rooms for air-compressors, hoists, pumps, fans, oil switches and transformers filled with oil, and other places where there is the risk of fire.

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Underground storage places for oil and grease, and rooms for oil switches and transformers containing oil, shall be of fire-proof construction and also shall be constructed in such a way as to make it possible to shut them off completely from their surroundings when necessary.

Article 2. The fire fighting devices mentioned in the preceding article shall be provided in pursuance of the provisions in the following items:

1. They shall be installed in the intake air side.

2. Fire extinguishers and supplies of dry sand or rock-dust shall be provided.

3. When necessary, measures shall be provided to use pump lines, water lines or compressed air lines as water mains for hydrants.

4. A fire extinguisher for electrical fire shall invariably be provided at or near all electrical installations.

Article 3. Supplies of rock-dust or dry sand shall be provided in a place outside of major underground electric stations.

(Restrictions on Using Fire)

Article 4. No fire shall be used underground in Class A and Class B mines.

However, this provision shall not apply when firing shots, and when using electricity or flame for repair work in a safe place and in a safe way under the direction of the safety supervisor or assistant safety supervisor in underground of Class B mines, or when using electric heaters for heating purposes.

When carrying out welding or cutting operations, by using electricity or flame mentioned in the preceding paragraph, fire prevention and fire fighting measures shall be provided.

Article 5. No fire shall be used at coal cleaning plant and other places on the surface where coal dust exists in excess.

When welding or cutting with electricity or flame is done in a structure on the surface, fire extinguishers and supplies of dry sand or rock-dust shall be provided in a nearby place.

Article 6. When installing an underground lamp-man box in a Class C mine, it shall be placed in a safe place in the intake air way.

When installing an underground lamp-man box in a Class A or Class B mine, it shall be installed under the permission of the chief of the Mine Safety and Inspection Bureau.

(Oil and Grease)

Article 7. Oil and grease shall not be allowed to accumulate around any electrical installations.

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Oil and grease, when kept in face regions, shall be kept in closed metallic containers.

Article 8. Surface storage for oil, grease and other inflammable material shall be installed at a place of adequate distance from the pit-mouth or other buildings.

These oils, greases, and other inflammable materials shall be kept in tightly closed containers.

(Fire Prevention Measures on the Surface)

Article 9. Buildings within a distance of 30 meters from the pit-mouth shall be provided with fire prevention measures.

However, this provision shall not apply when a fire door is provided at the pit-mouth or when the entry is of fire-proof construction for a distance not less than 10 meters from the pit-mouth.

(Fire Prevention Area)

Article 10. For the purpose of protecting the mine from forest fire, an adequate fire prevention area shall be provided, by such means as removing the grass and plants on the area within 50 meters of the pit-mouth.

(Fire Prohibited Area)

Article 11. In Class A and Class B mines, a fire prohibited area shall be provided on the surface for an adequate extension around the pit-mouth.

(Smoking Prohibition)

Article 12. Smoking in or about surface buildings shall be prohibited, when necessary, for the prevention of fire or explosion.

Article 13. In Class A and Class B mines, smoking underground shall be prohibited and also the carrying in underground of lighting devices, smoking pipes, tobacco or pocket hand heaters shall be prohibited. However, this provision shall not apply when firing instruments are necessary for operations are carried, under the direction of the boss in charge.

Article 14. In Class A and Class B mines all persons shall be searched at the pit-mouth each time they go underground, for lighting devices, smoking pipes, tobacco, or pocket hand heaters.

When deemed necessary by a boss in charge, further search may be made in the mine.

CHAPTER 13. STRUCTURES AND EQUIPMENT

(Tipples and Coal Cleaning Plants)

Article 1. Tipples and coal cleaning plants shall comply with the provisions in the following items:

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1. In order to prevent coal dust from entering the mine, tipples shall not be located at or near intake openings.

2. In dusty locations, motors, switches and controllers shall be of dust-proof construction.

3. Coal dust at and near tipples and cleaning plants shall be cleaned daily.

4. Water shall be sprinkled when large quantities of coal dust are released from tipples.

(Steam Boiler and Compressor Plants)

Article 2. All steam boilers shall receive at least once a year an inspection by the chief of the Mine Safety and Inspection Bureau.

The result of the inspection shall be kept on record.

Article 3. Steam boilers and compressed-air receivers shall be installed in pursuance of the provisions in the following items:

1. Stairways shall be provided to give easy access to top of boilers, and runways shall be provided between boilers.

2. Compressed-air receivers shall be provided with safety valves which shall be inspected by the machinery safety boss every day.

3. Steam boilers and compressed-air receivers shall be provided with pressure gauges.

4. Compressed-air receivers shall be blown out regularly for cleaning purposes.

(Other Plants and Equipment)

Article 4. The under-mentioned parts of machinery or equipment which are liable to cause danger shall be guarded by enclosures, coverings or other safety devices:

1. Gears, sprockets, friction devices, and couplings with protruding bolts and nuts.

2. Shaftings, projecting shaft ends, and driving devices with belt, chain or rope that are within two meters of the floor or platform.

3. Flywheels or parts of flywheels that are within two meters of the floor or platform.

4. Circular and band saws and planers.

5. Repair-pits.

Article 5. Grinders shall be provided with the following devices:

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1. Safety washers and tool rests.

2. Substantial protecting hoods, the openings of which shall not expose more than 90 degrees sector of the grinding wheel.

3. Eye shields, unless dust goggles are worn while grinding.

(Stairways, Ladders and Platforms)

Article 6. Stairways for surface structures, such as cleaning plants or headframes of shaft shall be provided with safe handrails.

Article 7. Platforms, elevated walkways and openings in floor shall be provided with safe handrails.

(Prevention of Danger by Thrown-out Materials)

Article 8. When any object or material is to be thrown out in a surface working place from a height of more than 3 meters, an adequate measure to prevent danger shall be provided, or a watchman shall be stationed at the place.

Mine workers shall not throw things from a place more than 3 meters high, unless some measures are taken in compliance with this article.

Article 9. In a surface working place, when there is any danger of some object or objects falling down on the spot, or flying about, safe netting devices, provision of a keep-off area or other adequate preventive measures shall be provided.

(Handling of Machinery and Tools)

Article 10. Mechanical equipment shall not be repaired, oiled or cleaned while in motion, unless such oiling can be done without danger.

Article 11. Rock drilling with percussion drills shall be provided with dust preventive devices, unless when dust respirators are used.

Article 12. Mining machine operators, drillers and operators of all machinery at working face shall not operate their equipment when any persons are in such proximity as to be endangered.

(Approvals and Reports)

Article 13. When steam boilers, aerial ropeways, trackways for locomotives (including surface trackways handling men), surface trackways extending more than one kilometer, shaft or slope hoists which handle men (including those used on the surface), and cleaning plants and other surface plants attached to the mine equipped with prime mover or movers, are installed, an application stating subjects prescribed separately in a ministrial information, shall be submitted to the chief of the Mine Safety and Inspection Bureau for his approval.

The chief of the Mine Safety and Inspection Bureau may, if he deems it necessary, require the submission of an application concerning the alteration of the equipment mentioned in the preceding paragraph, in spite of the provision of paragraph 2, article 14.

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Article 14. When main or spare fans for mine ventilation, air-compressors (excluding compressors of less than 3 kgs per sq. cm.), underground endless-rope trackways or hoisting equipment (excluding hoists which handle men) which are equipped with a prime mover of 75 KW or over, are installed, removed or altered, a report stating subjects prescribed separately in a ministrial information shall be submitted to the chief of the Mine Safety and Inspection Bureau 14 days prior to the starting of the work.

The same is required for the removal or alteration of equipment mentioned in paragraph 1, article 13.

(Examination of Performance)

Article 15. When the work of installation, removal or alteration of equipment provided in article 13 is completed, an examination by the mine inspector, shall be carried out.

The same is required when equipment is to be used again after a suspension of operation for a period of more than one year.

After undergoing the examination provided in the preceding paragraphs, examination for their performance shall be conducted by the mine inspector once in every two years.

According to the result of examination the period of time provided in the preceding paragraph may be either shortened to a necessary limit or lengthene by at most one year, by the chief of the Mine Safety and Inspection Bureau.

When the operation of the equipment provided in paragraph 1 is to be suspende for a period of more than one year, a report shall be submitted to the chief of the Mine Safety and Inspection Bureau.

Article 16. An examination certificate shall be issued to every owner of a mining right by the mine inspector when an examination provided in the preceding article has been carried out. The certificate shall be posted prominently on or near each equipment.

CHAPTER 14. EQUIPMENT AND ARTICLES FOR UNDERGROUND USE

(Restrictions)

Article 1. In Class A and Class B mines, no explosives, machinery, tools and parts thereof mentioned in the following items (hereinafter referred to as equipment and articles for underground use) shall be used unless passed for their types or kinds the examination of the "Mine Safety Research Institute" carried out in accordance with the provisions in an ordinance of separate issuance. (As for precision inflammable gas detectors and anemometers, they shall pass the examination for every single apparatus).

1. Explosives
2. Firing articles
   a. Fuses
   b. Detonators

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3. Safety sheath
4. Firing devices for blasting
   a. Electrical firing devices
   b. Fuse firing devices
5. Electrical equipment
   a. Electric generators
   b. Electric motors
   c. Rectifiers or convertors
   d. Transformers
   e. Instrument transformers
   f. Static condensers
   g. Storage batteries
   h. Starters
   i. Controllers
   j. Switches
   k. Electric heaters
   l. Connectors
   m. Safety devices
   n. Relays
   o. Electric measuring instruments
   p. Signal apparatus
   q. Telephone equipment
   r. Storage battery locomotives
   s. Electric coal cutters
   t. Electric loaders
   u. Electric drills
   v. Other articles which give sparks or intense heat
6. Electric wires or cables
7. Illuminating instruments
   a. Portable electric safety lamps
   b. Fixed electric safety lamps
   c. Gasoline safety lamps.
8. Gas detectors
   a. Simple type inflammable gas detectors
   b. Precision inflammable gas detectors
   c. Carbon dioxide detectors
   d. Carbon monoxide detectors
9. Anemometers
10. Automatic alarms
   a. Inflammable gas automatic alarms
   b. Ventilation automatic alarms
11. Oxygen breathing apparatus
12. Other articles which give sparks or intense heat, or which handle high pressure substance

(Conditions for Use)

Article 2. When using equipment and articles for underground use, the condition for use stated in the certificate for examination shall be strictly followed.

(Prohibition of Using Damaged Equipment and Articles)

Article 3. Damaged or defective equipment and articles for underground use shall not be used in the mine.

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(Administrative Procedure)

Article 4. When deemed necessary from the actual situation of the mine, the use of equipment and articles which have passed the examinations provided in article 1, may be restricted or prohibited by the chief of the Mine Safety and Inspection Bureau.

Article 5. When deemed necessary from the actual situation by the chief of the Mine Safety and Inspection Bureau, the provisions in article 1 may not be applied to the pit or part of the pit, or to some specified type or kind of equipment and articles.

Article 6. When the classification of mines are designated in accordance with article 1 of chapter 3, the equipment and articles for underground use which are in use at that time may be used for a limited period of three months from the day of designation, in spite of provisions in article 1. When the chief of the Mine Safety and Inspection Bureau deems the cause as unavoidable, he may lengthen the period of time in the preceding paragraph.

CHAPTER 15. RESTRICTIONS FOR MINING

(Prevention of Surface Subsidence)

Article 1. When the mining in an area underneath a ground of farm or housing, or other places is liable to impair public interest by surface subsidence, permission shall be obtained from the chief of the Mine Safety and Inspectio Bureau by submitting a working program in accordance with Form No. .

(Restriction for Mining Under the Sea, River or Lake)

Article 2. When mining under the sea, river or lake, permission shall be obtained from the chief of the Mine Safety and Inspection Bureau by submitting a working program in accordance with Form No. .

(Standards of Restriction for Mining)

Article 3. When working a coal seam under the sea, it shall be carried out in pursuance of the provisions in the following items:

1. The depth of the sea at and around the area proposed for mining shall be accurately sounded, and also the earth strata between the sea bottom and the coal bed shall be investigated by boring or other methods.

2. One of the entries which opens to the surface shall be a slope of less than 20 degrees.

3. Mining shall be limited to sectional system and each section shall be provided with a water preventing dam or dams provided with doors to shut off and seal that section from others.

4. When excavating a roadway, a pilot boring of more than 20 meters shall be drilled and the excavation shall not be carried out within an area less than 5 meters of the end of bore hold, and also the entry shall be in advance of a working face at least a distance of 50 meters. The pilot boring shall be bored not only in the directio of the proposed elongation of the entry, but in the strata above the entry.

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5. In the tertiary below the sea bottom, areas in the following items shall not be worked:

   a. In an area within a depth of less than 60 meters from the sea bottom, when coal is worked.

   b. In an area within a depth of less than 30 meters from the sea bottom, when drifting an entry.

   c. In an area within less than 100 meters along the dip from the outcrop of the coal seam in the sea bottom.

6. In an area more than 60 meters and less than 100 meters from the sea bottom, the working of coal shall be carried out from the deep side by retreating pillar drawing system at the closing period of that pit.

7. When an entry is made through a fault which is liable to danger of inrush of water, a dam or dams shall be made and also water preventive devices, such as cementation or concrete lining shall be applied to the entry.

8. Coal seams shall be left unworked for a distance of more than 20 meters from both sides of a fault which is liable to cause danger of inrush of water.

9. A part corresponding to the bottom of a valley shall not be made in an entry used as the main travelingway or the roadway installed with major power lines.

10. Direct telephone communication shall be installed between the office on the surface and each face region, major hoisting rooms, and major pump rooms so as to give simultaneous warning when necessary.

11. A watchman or watchmen shall be stationed at all times in the underground office.

12. Electric lights shall be provided in the main haulageway.

13. No person shall be allowed to go underground without carrying a safety lamp.

14. More than one of the underground safety bosses shall be solely in charge of the measurement of quantity of water and the following items shall be investigated every day and entered into the safety diary:

   a. Average quantity of total daily drainage

   b. Average daily drainage at each major pump room.

   c. The condition and cause of change in the drainage quantity, if there is any.

   d. When the amount of underground water at a place exceeds 0.3 cub. meters per minute, the name of the place, quality and quantity of water, the condition of inrush of water, and measures taken against it.

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e. The condition of pilot boring and advancing drifting.

(Mine Maps)

Article 4. When mining under the sea a map indicating the following items shall be prepared:

1. Depth of the sea (at normal sea level)
2. Depth from the sea bottom at each major point in the mine
3. Results of test boring or other investigation of the strata
4. Thickness and the nature of alluvium
5. Location, nature, strike, dip and throw of faults
6. Location, direction and length of pilot boring
7. Location of the places where the amount of underground water exceeds 0.3 cub. meters per minute and the average quantity of water at each of such places.
8. Location or proposed location of dams.

(Application of Restrictive Provisions)

Article 5. Provisions in article 3 and 4 shall apply when mining under a river, lake or marsh. However, when the amount of underground water is not so large as to cause danger, the application of provisions in those articles may be exempted by the permission of the chief of the Mine Safety and Inspection Bureau.

(Approaching Abandoned Workings)

Article 6. No area in a coal bed in a region within less than 100 meters along the dip from an abandoned working shall be worked when that abandoned working is or likely to be in a flooded state.

Article 7. When the danger of sudden liberation of gas or inrush of water is liable, as in such cases as when developing an entry or carrying out excavation within an area less than 50 meters from an abandoned working or a vein of water other than mentioned in the preceding article, adequate measures, such as pilot boring, shall be taken.

Excavation of an entry shall not be developed within an area less than 5 meters from the end of a bore hole when pilot boring is carried out in accordance with the preceding paragraph.

A dam or dams shall be provided besides those measures in pursuance of provision in paragraph 1, when the danger of large amounts of water is liable.

(Report on Inrush of Water)

Article 8. When the inrush of water at one place exceeds 0.3 cub. meters per

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minute in mines which are worked in accordance with article 3, article 5 through article 7, and article 10, a report shall be made to the chief of the Mine Safety and Inspection Bureau whether there is any casualty or not.

(Safety Rule)

Article 9. The mining system shall be stipulated in the safety rule when a mine is worked in accordance with article 3, article 5 through 7, and article 10.

(Administrative Procedure)

Article 10. When working a coal seam under the sea, the chief of the Mine Safety and Inspection Bureau may, if he deems it necessary from the actual situation of the mine, apply whole or part of the provisions in article 3 through article 5.

CHAPTER 16. GENERAL SAFETY PROVISIONS

(Safety Committee)

Article 1. In any mine normally employing more than 50 mine workers, the owner of the mining right shall organize a safety committee. Members of the committee shall be selected either by the labor union, which is formed by the majority of labors, or by the majority of labors when no union is formed, shall join the safety committee.

A meeting of the safety committee shall be held at least once a month.

Major subjects with regard to the safety committee shall be kept on record.

(Safety Rule)

Article 2. In any mine normally employing more than 50 mine workers, the owner of the mining right shall receive the permission from the chief of the Mine Safety and Inspection Bureau, whenever a safety rule is to be stipulated or revised, by submitting an application in accordance with Form No. without delay.

In the safety rule, detailed provisions with regard to safety other than stipulated in this safety regulation may be prescribed.

(Safety Instructions)

Article 3. Newly employed mine workers shall be explained about the Mine Safety Regulations and safety rules by the owner of the mining right or safety guard and shall be given safety instructions necessary to carry out the work he is to be engaged in.

In Class A and Class B mines, when giving instructions, emphasis shall be placed on matters pertaining to the prevention of explosion, due to inflammable gas or dry coal dust.

In Class A and Class B mines, a new mine worker who has no experience in working underground in a mine of the same class, shall not work alone

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underground until he has been trained under the guidance of an experienced person in that work for at least 30 days.

(Notification of Rules)

Article 4. The gist of the provisions in this regulation and the safety rule shall be written in plain wording and posted prominently or placed in a convenient place to be widely known by all mine workers.

(Check Board System)

Article 5. The name and place of work of every mine worker working underground shall be clearly known on the surface by a check board system or written record.

(Communication Equipment)

Article 6. In Class A and Class B mines, telephone equipment shall be provided between the pit-mouth of a shaft or slope and at the bottom of the shaft or slope, and at each of the major face regions.

Article 7. When deemed necessary by the chief of the Mine Safety and Inspection Bureau, he may order the owner of the mining right of a Class C mine to install a telephone or other communication equipment between the surface and each of the major operating places underground.

(Protective Clothing)

Article 8. Persons engaged in transportation operation on the surface and underground shall wear suitable clothing in order to prevent danger.

Article 9. Welders and helpers shall put on proper shields or protective goggles.

(Prohibition to Damage or Alteration of Safety Installations)

Article 10. Mine workers or other persons concerned shall not damage or alter any installation with regard to safety, such as danger signs, barriers or other devices closing the passage, unless when a safety boss concerned executes his duty under the direction of the safety supervisor or the assistant safety supervisor..

(Cleanliness, Tidiness and Maintenance)

Article 11. All mine workers shall use their minds to keep operating places clean and tidy and shall not discard waste or scraps at places other than provided for.

Article 12. Mine workers shall store the supplies of material for operation in a tidy manner and shall carefully maintain the machinery and tools they used in operation.

(Mine Map for Safety)

Article 13. The mine map for safety shall be made in pursuance of provisions in the following items:

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1. The scale shall be greater than 1:5,000 and smaller than 1:2,000.

2. Pit-mouths, roadways, slopes, shafts, working faces, places under development and abandoned workings or entries, shall be indicated.

3. Location and type of fans, direction of air current, volume of air current (including those in split current), ventilation doors, temperaturs, humidity and percentage of gas content, installations for water sprinkling and rock-dust, location of spontaneous combustion and other necessary subjects for safety shall be entered.

Article 14. The mine map for safety shall be posted in an office near the pit-mouth.

Article 15. The mine map for safety shall be submitted to the chief of the Mine Safety and Inspection Bureau.

The map shall be submitted every month for Class A mines, once in every three months for Class B mines and once in every six months for other mines.

(First Aid)

Article 16. First aid equipment and material to be used in case of injury shall be provided at the mine by the owner of the mining right and the location thereof, together with the direction for use, shall be made known to all mine workers. The first aid equipment and material shall always be kept in clean places.

Article 17. Articles in the following items at least shall be provided as the first aid equipment and material:

1. Bandage material, pincettes and disinfectant, such as tincture of iodine.

2. Oils and other ointment shall be provided in such places where objects of high temperature are handled and other places where the risk of burns exist.

3. Stop-bleeding bandages (tourniquets), sets of splints and stimulants shall be provided in such places where the risk of serious injuries exist.

4. Stretchers.

Article 18. When a serious injury occurs, a doctor shall be notified immediately and an adequate measure for medical relief shall be taken.

(Mine Rescue Corps)

Article 19. In each of Class A and Class B mines, a rescue corps shall be provided for use in case of an accident. However, a joint rescue corps may be provided jointly by several mines or several owners of mining rights.

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The rescue corps shall be organized of at least three teams, each consisting of at least five members and at least 12 sets of oxygen breathing apparatus and accessories shall be provided at each rescue corps.

The members of a rescue corps shall accomplish the fundamental training course with regard to mine rescue work and shall be the holders of certificates issued by the chief of the Mine Safety and Inspection Bureau.

The members of a rescue corps shall have additional training at least every three months.

The organization of the rescue corps, course of training and the kind and quantity of major equipment or material shall be stipulated in the safety rules.

When organizing a joint rescue corps, the mines or owners of the mining right concerned shall jointly prepare a rule for the joint rescue corps with regard to matters in the preceding paragraph, and the said rule shall be approved by the chief of the Mine Safety and Inspection Bureau.

(Report on Accidents)

Article 20. Whenever gas or coal dust explosions occur, fire or an inrush of water into the mine occurs, the owner of the mining right shall immediately report the outline of the accident to the chief of the Mine Safety and Inspection Bureau.

The same procedure as in the preceding paragraph shall be taken by the owner of the mining right whenever the occurrence of an accident other than mentioned in the preceding paragraph results in death or serious injury to any person (serious injury refers to such cases when the injured is estimated to take leave for a period of more than 4 weeks); or injuries to more than 5 persons who are estimated to take leave for more than 3 days; or the suspension of whole or part of the operation, when there is no death or injury.

The details of the development of the accident and the measures taken shall be reported to the chief of the Mine Safety and Inspection Bureau in accordance with Form No. , and all records shall be kept.

Reports mentioned in the preceding paragraph shall be kept for a fixed period of time prescribed separately in a ministrial information.

Article 21. With regard to death and injury, a monthly report in accordance with Form No. shall be submitted to the chief of the Mine Safety and Inspection Bureau.

CHAPTER 17. MINE INSPECTORS

(Field Inspection)

Article 1. In order to supervise the application of provisions in this regulation, the mine inspector shall visit and make personel examinations of working places of mines, and shall examine the condition of ventilation, the disposal of gas or coal dust and general safety conditions.

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(Recommendations About Sanitation)

Article 2. The mine inspector may make recommendations to the administration officer in charge of sanitation with regard to matters pertaining to sanitation other than prescribed in this regulation.

(Certificate of Inspection)

Article 3. The mine inspector shall issue a certificate with regard to the result of the inspection to the owner of the mining right of each mine inspected, and a duplicate certificate shall be posted at a prominent place where it may be read by any of the mine laborers.

(Number of Times of Inspection)

Article 4. The mine inspector shall inspect a mine at least such a number of times as the following:

1. Class A mines - 6 times a year
2. Class B mines - 4 times a year
3. Class C mines - 3 times a year.

Article 5. Certificate sheet in pursuance of provisions in paragraph 2, article 28 of the Law shall be made in accordance with Form No. .

SUPPLEMENTARY PROVISIONS

Article 1. This regulation shall be enforced as from the date of enforcement of the Mine Safety Law.

Article 2. The Regulation concerning control of colliery explosions (Ordinance No 22 of the Ministry of Commerce and Industry, Dec. 1929) and the Regulation concerning control of colliery Explosives and Equipment (Ordinance No. 68 of the Ministry of Commerce and Industry, Sept. 1940) shall be repealed.

Article 3. One who holds a position as a technical supervisor or boss in pursuance of former regulations on the day of enforcement of this regulation may be deemed as a safety supervisor, assistant safety supervisor, safety guard or safety boss, appointed in compliance with this regulation, for a period of one year from the date of enforcement of this regulation.

Article 4. A mine composed of a colliery or collieries designated in accordance with provisions in article 1 of the Regulation concerning control of Colliery Explosions, shall be treated as a Class A mine prescribed by provisions of article 1, chapter 3.

A mine which has been required to appoint a shot-fire boss in pursuance of provisions in article 34 of Mine Police Regulations shall be deemed as a Class B mine prescribed by provisions of article 1, chapter 3.

With regard to the mines in the preceding two paragraphs, the date of enforcement of this regulation shall be deemed as the date of designation of classification prescribed in article 1, chapter 3.

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With regard to the mines in paragraph 1 and 2, when ah application for exemption in accordance with the provision of article 2, chapter 3 is submitted, the chief of the Mine Safety and Inspection Bureau may, if he deems there is any unavoidable cause, amend the designation of classification within a period of six months from the date of enforcement of this regulation.

Article 5. Those equipments stipulated in paragraph 1, article 13 and 14, chapter 13, which have been already installed prior to the enforcement of this regulation shall be deemed as approved or reported in pursuance of provisions in this regulation.

For such equipment provided in paragraph 1, article 13, an examination stipulated in article 15 of chapter 13 shall be carried out within one year of the date of enforcement of this regulation.

Article 6. With regard to the existing structures, installations, equipment, machinery or tools, if there is any cause which may make the application of the provisions in this regulation impracticable at the time of its enforcement, an application to exempt them from the application of that provision may be submitted to the chief of the Mine Safety and Inspection Bureau.

For any case wherein the chief of the Mine Safety and Inspection Bureau may find the existence of any inevitable cause, he may authorize a temporary exemption from the application of the provisions in this regulation for a specified period of time.

However, with regard to roadways, he may exempt them from the application of the provisions in paragraph 1, article 5 of chapter 9 and article 5 of chapter 10, after giving order to make improvement in connection with prevention of danger.

Article 7. Any dealing, procedure, or other deed carried out in pursuance of the former regulation shall be deemed as carried out in accordance with the provisions of this regulation when there is any corresponding provisions in this regulation.

Article 8. The Regulation of Examination for Colliery Explosives and Equipment (Ordinance No. 69 of the Ministry of Commerce and Industry, September 1940) shall be revised as mentioned in the following lines. Article 1 shall be revised as:

"The examination carried out by the Mine Safety Research Institute for explosives, equipment, tools and their parts (hereinafter referred to as Equipment and articles for underground use) prescribed in each item of article 1, chapter 14 of the Mine Safety Regulation for Coal Mines shall comply with this regulation".

In article 12 and 13, the clause "article 5 of the Colliery Explosive and Equipment Regulation" shall be revised as "Article 4, chapter 14, of the Mine Safety Regulation for Coal Mines".

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Article 31-3 shall be added as "When deemed necessary by the chief of the Mine Safety Research Institute, equipment and articles which have passed the examination of paragraph 1 of article 2 for their type or kind, may be examined while they are in possession of the manufacturers of importers thereof".

Article 9. Article 136 of the Electrical Equipment Regulation shall be revoked.

Article 10. In article 451 of the Regulation for Labor Safety and Sanitation (Ordinance No. 9 of Ministry of Labor, October 1947) the clause "for the time being" shall be deleted.

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MINE SAFETY

	DATE	SUBJECT	ISSUING HEADQUARTERS & INDORSEMENTS
1.	30 Oct. 50	General Condition of the Flooding Disaster Occured at the Main Pit of Wakaoki Coal Mine	-

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To Mr Barratt

Masaru Onishi
Chief of Administration Sect.
Ube Branch of Hiroshima Mine
Safety and Inspection Division

Nat. Res. Division
File No. Mine Safety file
M-3-Y

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GENERAL CONDITION OF THE FLOODING DISASTER OCCURED AT THE MAIN PIT OF WAKAOKI COAL MINE.

1. Date : 12:45 p.m.,October 30th,1950.
2. Place of flooding occured : Ichigou-Warizume,Migi-Zyupen,Right No.1 Main Road, Honkou(Main Pit)
3. Number of sufferer : 32 persons.
4. The condition of before the disaster :

Coal digging had been done at the Hitoeishi seam(thickness of coal seam is 1.5 feet) in this coal mine,having monthly output about 2,000 ton,employing 164 persons including office workers,among those who,100 are underground workers.

At the moment of the disaster occurance,the number of worker in the pit were 69. They were digging the coal at the not-yet-digged area belong to the Hitoeishi seam of former Shinokinoyama Coal Mine. The Nanakou seam,which is the low seam coal lying 150 feet under the lower part of Hitoeishi seam,was almost digged through. Reaching the coal by Shaft and Incline,they digged both main road of south main road and right no.1 main road,and then digged the coal after digging each level gang way.

They digged an upward pit road from each level gang way keeping 42 feet distance from the center of the road to other's,having slope of level or 3 degree. After finishing the scheduled area digging,they digged the coal from the both wall of the road without back filling about 18 feet distance while backing out.

The Shaft has an inside diameter of 12 feet,and a depth of 150 feet. The Incline has a width consisting by a beam of 6 feet long,a frame leg post of 6 feet long, a slope of 15 degree,and a prolongation of 846 feet. South main road has a width consisting by a beam of 9feet,a frame leg post of 7 feet,prolongation of 984 feet, right no,1 main road has a width consisting by a beam of 6 feet,a frame leg post of 6 feet and prolongation of 1,260 feet and each level gang way has a width consisting by a beam of 4.5 feet,a frame leg post of 4 feet and the distance from the entrance of incline to the place of flooding is about 3,090 feet.

There are the shale having about 8 feet thickness,in the roof, and the sand stone having 30 feet thickness,lie upon them.

Water flow amount of all the pit has about 100 c.f/min, and water flow in the working face contain considerable salt. Result of analysis of salt contained in the water of the pit after the flood disaster occurance,showed salt content of 11,612g/l. Surrounding sea water contain the salt of 16,000 g/l,so it contains a 72.5% of thickness agaist sea water's.

5. Condition at the time of flooding.

The place occured flooding was

persons including office workers,among those who,100 are underground workers.

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There are the shale having about 6 feet thickness,in the roof, and the sand stone having 30 feet thickness,lie upon them.

Water flow amount of all the pit has about 100 c.f/min, and water flow in the working face contain considerable salt. Result of analysis of salt contained in the water of the pit after the flood disaster occurance,showed salt content of 11,612g/l. Surrounding sea water contain the salt of 16,000 g/l,so it contains a 72.5% of thickness agaist sea water's.

5. Condition at the time of flooding.

The place occured flooding was the Ichigou-Wari Migi-Zyupen Ritht No.1 Main Road, advancing about 180 feet from level gang way.

Driving men entered the pit a few minutes past seven in the morning of that day, finished loading 4 car of coal and same number of refuse.(one car load is 15 ton) After lunch(estimated to be about 12:45 p.m.),when one of them picked the coal seam, suddenly a large quantity of water rushed out from the coal face(amount of rushed water is estimated to be about 4,000 c.f/min),at last,water filled up the pit,caused 32 sufferers of 69 workers in the pit at the time. After 22 hour 15 minutes past at the time of flooding occurance,that is, 10 a.m. of 31st, a water rushing was stopped at the place of 17.60 meter from the bottom of Shaft(and it is 25.72 meter under the sea level), and it is estimated that the total amount of flooding water is about 1,180,000 c.f. and after stoppage of water rising,the amount of flooding water is about 850 c.f/min.

6. A symptom of before the flooding.

According to two driving men working at the working face at that time, some water leaked out from the coal wall at the working face but they could not find any unusal things compared with other area and it seems that the coal wall is hard in that morning but they did not think that it was specially hard because the coal wall at the working face usally has varidus kinds of hardness. They did not find any particular unusal things besids these.

On the spot boss in charging of the place where flooding occured was not informed of any noticeable matters as to water rushing , from workers while he made on the spot

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sting by a beam of 4.5 feet,a frame leg post of 4 feet and the distance from the entrance of incline to the place of flooding is about 3,090 feet.

There are the shale having about 6 feet thickness,in the roof, and the sand stone having 30 feet thickness,lie upon them.

Water flow amount of all the pit has about 100 c.f/min, and water flow in the working face contain considerable salt. Result of analysis of salt contained in the water of the pit after the flood disaster occurance,showed salt content of 11,612g/l . Surrounding sea water contain the salt of 16,000 g/l,so it contains a 72.5% of thickness agaist sea water's.

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6. A symptom of before the flooding.

According to two driving men working at the working face at that time, some water leaked out from the coal wall at the working face but they could not find any unusal things compared with other area and it seems that the coal wall is hard in that morning but they did not think that it was specially hard because the coal wall at the working face usally has various kinds of hardness. They did not find any particular unusal things besids these.

On the spot boss in charging of the place where flooding occured was not informed of any noticeable matters as to water rushing , from workers while he made on the spot inspection at 9 a.m. on that day.

The boss himself did not find any unusal things which might be cause a flooding, so that he did not make any report to the safety administrator. Upper position boss made on the spot inspection at 12:20 p.m. on 29th,both of them did not notice any unusal things.

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7. Cause of flooding.

As a result of various discussion and inspection,it is estimated that the cause of water rushing is that the driving men digged coal wall through the old pit,not expected it's existence by the safety administrator.

(1) When flooding occured,on the spot upper boss was having the lunch at the station in the pit but as he went the spot at once,he smelled strong odour of the old pit.

(2) The amount of rushing water was a large quantity at first but gradually decreased and highest water level of flooding was very low compared with the sea level.

(3) According ot the instance of the Ube district,when water rushing from the sea bed, at first water comos out very little,after then,gradually increase the amount,making leaked point big,and suddenly reached the sea bed, make a large quantity of water rushing so that,it is not expected that the sudden rush of the sea water occur at the depth of 150 feet under the sea bed of the Ube district.

(4) To be estimated that the water level of the former Shinokinoyama's old shaft get about 60 feet lower after the flooding occured at the Wakaoki Coal Mine.

(According to the maps of the old pit,the old pit that cause a flooding to the Wakaoki Coal Mine, connected with the shaft of former Shinokinoyama Coal Mine through the under ground)

(5) It is estimated that the time of the flooding occurance is about 45 minutes past noon of 30th but it was not found any unusal things such as the whirl pool,draw in and other particular movement and bubbled of the sea water which was estimated to be a cause of the sea water coming,on the sea face of the place flooding occured, at about 1:30 p.m when the flooding amount was estimated largest since right after the flooding occurance (the owner of mining right took a boat and witnessed this situation)

(6) In this district,usually a large quantity of CO_2 gush out at the same time when water rushing from the old pit occured,so it was noticed that the considerable CO_2 gushed out in this flooding area causing ,at first,such as a light of lump weny off and others.

8. Estimation of water rushing amount and total drainage amount needed for rehabilitation

It is estimated that the total amount of water rushing of all the pits of the Wakaoki Coal Mine are about 1,180,000 c.f.,but old pits of closed coal mine formerly called Shinokinoyama(operating till 1940),digging the coal wide range including the Wakaoki Coal Mine,lies around considerable wide range,so that,it is deemed that the considerable amount of the waters of these old pits must be drained. So, if we roughly estimate it's cubic measure is about 2,550,000 c.f.,the total drainage amount will be 3,730,000 c.f.

9. Counter measure for drainage.

Condition of water rushing,drainage and future program of drainage are mentioned on annexed paper.

10.Estimated period for rehabilitation.

(1) Total amount of drainage : 3,730,000 c.f.

(2) Amount of water flow in the pit :

Wakaoki Coal Mine's water flow amount before the flooding occured :100 c.f/min.

about 30 feet lower after the flooding occured at the Wakaoki Coal Mine.
(According to the maps of the old pit,the old pit that cause a flooding to the Wakaoki Coal Mine, connected with the shaft of former Shinokinoyama Coal Mine through the under ground)
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10.Estimated period for rehabilitation.
(1) Total amount of drainage : 3,730,000 c.f.
(2) Amount of water flow in the pit :
Wakaoki Coal Mine's water flow amount before the flooding occured :100 c.f/min.
Shinokinoyama Coal Mine's past maximum water flow amount was a 200-300 c.f/min.,of which a 100-150 c.f/min. gave an effect on this mine(Shinokinoyama Coal Mine were digging at the two seams of Hitoeishi and Nanakou),so that, it was deemed that the Wakaoki Coal Mine's water flow amount--100 c.f/min.-- was included this amount after Shinokinoyama Coal Mine's close, and more, we deemed that the considerable water pressures of the Shinokinoyama Coal Mine's old pit was put on to the Wakaoki Coal Mine's water flow amount of 100 c.f/min.,so that, if there is necessity to drain the 70 % of estimated water flow amount through whole draining period,the water flow amount which should be drained,are as follow.

100+(100 - 150)=200 - 250 c.f/min.
200 × 0.7= 140 : 140 - 175 c.f/min.
250 × 0.7= 175

(3) Pump's drainage capability.
If we assume to drain with equipment on hand provided by drainage program as mentioned on annexed paper,it's draines amount will be 340 c.f/min., so that, if the water flow amount take away from it,the drainage amount as mentioned as follow will be possible,;

340 - 140 = 200 : 165 - 200 c.f/min.
340 - 175 = 165

we divide all drained amount by it,the answer is as follow. ;
3,730,000 ÷(165 × 60 × 20)≒ 19 : 16 -19 days

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Coal Mine are about 1,180,000 c.f.,but old pits of closed coal mine formerly called Shinokinoyama(operating till 1940),digging the coal wide range including the Wakaoki Coal Mine,lies around considerable wide range,so that,it is deemed that the considerable amount of the waters of these old pits must be drained. So, if we roughly estimate it's cubic measure is about 2,550,000 c.f.,the total drainage amount will be 3,730,000 c.f.

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340 - 140 = 200
340 - 175 = 165 : 165 - 200 c.f/min.

we divide all drained amount by it,the answer is as follow. ;

3,730,000÷(165 × 60 × 20) ≒ 19 : 16 -19 days
3,730,000÷(200 × 60 × 20) ≒ 16

we assumed the actual operating hour of pump was average 20 hours a day)
We estimated it need about 20 days (16 - 19 days) to be able to finish draining but we are conducting the investigation at present to establish more accurate drainage estimation by pump's actual draining amount,change of water level and cubic measure of each level of pits road and other.

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11. Rehabilitation.
Items needed special care to operate the draining work in the pit are as follow.
(a) Old pit.
The range and depth are not accurate, so that, it is necessary to make a careful draining work because it is difficult to estimate whether there is a large quantity of water rushing or not from old pit when water level of old pit get higher as a result of a counter movement against lowering water level of the pit during draining.
To do this,is to make a comparision and examination of water level's change in each hour or minute,draining amount,place of old pit and hight of pit road and etc, and to prevent an accident during draining. and more, considerable amount of CO_2 might gush out,so that,the ventilation,examination of gas and the utmost care against CO_2 must put on.
(b) Mine damage.
This mine was operating under the sea bed, so that, there are no direct mining damage on the surface caused by underground draining, but old pits spread on conside wide scope, so the fall of surface in these area might be occured, so that, we are conducting an investigation at present,however,Onoda Electric Power Station, most important building in these area,was built on the not-yet-digged area to avoid a future trouble after examination of whether there was an effect on or not by underground mining when building started, but although there need re-investigation of the effect from th draining,the result ofpresent investigation,shows that the valuable building of the Electric Station are still on the not-yet-digged area, so that, it is deemed there are almost no effect from the draining.

12. Future counter measure.
Lack of understanding of old pit's position are the basic cause of this disaster occurance,so it is deemed it's future counter measure mentioned as follow.
(1) Thorough investigation of old pit's position.
Each coal mine at the Onoda district had lost most of their important document by flooding disaster caused by destruction of embankment no. 60 of Sakurayama coal mine, Ube district on 1942, and later,most of important documents of the competent authoriti were burn to loss by war, so the competent authorities and many coal mines have not accurate maps of operating mining area in old times, and more,whenever same mining area's operators chaged hands many times,it seems that transfer of accurate survey map of the pit wasnot done perfectly, so that, to take a measure to submit their map to us after making arrangement with each coal mines,old managements and old experienced men and based on these maps, to make perfect preparation of the map after listening the said coal mine concerned,old experienced men and other's opinion as a reference.
(2) Regulation of standard advance boring.

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Lack of understanding of old pit's position are the basic cause of this disaster occurance,so it is deemed it's future counter measure mentioned as follow.

(1) Thorough investigation of old pit's position.

Each coal mine at the Onoda district had lost most of their important document by flooding disaster caused by destruction of embankment no. 60 of Sakurayama coal mine, Ube district on 1942, and later,most of important documents of the competent authoriti were burn to loss by war, so the competent authorities and many coal mines have not accurate maps of operating mining area in old times, and more,whenever same mining area's operators chaged hands many times,it seems that transfer of accurate survey map of the pit wasnot done perfectly, so that, to take a measure to submit their map to us after making arrangement with each coal mines,old managements and old experienced men and based on these maps, to make perfect preparation of the map after listening the said coal mine concerned,old experienced men and other's opinion as a reference.

(2) Regulation of standard advance boring.

We can not expect a perfect result even from the investigation by the measures mentioned above, so it is to make an enforcement principle of advance boring and to make them enforce it.

(3) Designation of coal mine.

The 42 coal mines out from the 55 coal mines of Ube district have old pits in thei operating area,the 76 pits out from the 97 pits of Ube district have old pits.

But the coal mines has the old pit being in danger of water rushing, should be designated to enforce following points.

(a) Construction of accurate map.

(Increase of surveyor concerned,draft of enforcement of surface,underground boring

(b) Strict enforcement of advance boring.

(c) Select such as special safety technical official,qualified person and designated miner for old pit and special education to them must be enforced.

(d) Increase of safety technical official.

(e) Establishment of special flood disaster prevention committee.

It should be organized with technician having profound experience of underground water disaster,old men having knowledge of old pit's position in this district and experienced and learned persons and make them study and discussion of the position of old pit, and it's measure,designation of coal mine, and counter measure against water rushing.

(f) Study of physical investigation of old pit.

To study the measuring instrument and others.

(g) Establishment of cooperative body against emergency disaster between coal mines digging old pit.

(h) Establishment of counter measure at the time of emergency disaster occurance in the coal mines digging old pit.

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(Especially the small and middle coal mines liable to make a confusion in the case of emergency disaster occurance, so it is necessary to establish a complete counter measure against it.)

(8) Strenghten up of instruction and supervision of this Inspection Division.
(Specially on small and middle coal mine)

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		Month	Real	Labor
6	av 1700-1800	Apr	1560	
7	2000	May	1050	
8 "	1200	Jun	1020	
9 "	800	Jul	2090	
		Aug	1200	
		Sep	800	
		Oct	910	

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Gen. Cost

1F

20 Nov 1PM Tottori

General meeting Mino-gun 6

11 Forestry ~~Tsusaka~~

移栄 Fr

Tohoku 1

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

11月分年[illegible]要災害

10月22日	沖之山	落盤	1名	重傷
〃 24日	松浪	〃	1名	死亡
〃 31日	長伴	〃	1名	〃
11 7日	沖宇部 ✓	〃	1名	〃
11 10	松浪 ✓	〃	1名	〃
11 11日	沖之山	工具	1名	重傷
11 13日	平原 ✓	落盤	1名	死亡
11 14日	本山	炭車	1名	重傷
11 14日	花森 ✓	落盤	1名	重傷

Total 9名

廣島鑛山保安監督部宇部支部