Do not use any grade of petrol or turpentine oil or any other inflammable liquid or corrosive chemical for cleaning purpose.

Report all skin irritations to the dispensary immediately.

Rules for the prevention of fire hazards.

Smoking is not allowed in the prohibited areas.

Fire fighting equipment is not to be put to other uses, Except fire fighting. Fire buckets are not to be misused.

The safety officer must be informed early when any fire equipment has been used or misused so that replacement could be effected early.

Deposit all oily.

Complete precautions against fire must be taken before doing any welding or cutting works.

57. Excessive weights.

No person shall be employed in any place of work to lift, carry or move any load, so heavy as to be likely to cause him injury.

The Central or the State Boards, as the case may be, may make Rules prescribing the maximum weights which may be lifted, carried or moved by adult men, adult women, adolescents and children employed in place of work or in any class or discription of places of work or in carrying on any specified process.

58. Safety of Buildings and Instructions.

1) If it appears to the Inspector that any building or part of a building or any part of the ways or machine at a place of work is in su a condition that it is

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dangerous to human life or safety, he may give to the employer, at the place of work, instructions, in writing, specifying the measures, which, in his opinion, should be adopted, and requiring them to be carried out before a date to be specified in the instructions.

2) If it appears to the Inspector that the use of any building or part of a building or any part of the ways or machines in place of work involves imminent danger to human life or safety, he may give to the employer, in writing, at the place of work, instructions prohibiting its use, until it has been properly repaired or altered.

59. Notice to be given of accidents.

1. Where at any place of work, an accident occurs -

(a) causing death or bodily injury, by reason of which the person injured is prevented from working for a period of 48 hours or more immediately following the accident, or

(b) an explosion, ignition, spontaneous heating, out-break of fire or irruption or inrush of water or other liquid matter, or

(c) an influx of inflammable or noxious gases, or

(d) a breakage of ropes, chains or other gear by which persons or materials are lowered or raised in a shaft or an incline, or

(e) an overwinding of cages or other means of conveyance in any shaft, while persons or materials are being lowered or raised, or

(f) a premature coppalse of any part of the working or

(g) any other accident which may be prescribed.

...2.

The employer at the place of work shall send notice of the accident or occurance to the Inspector of the area concerned in such form and within such time, as may be prescribed, and he shall also simultaneously paste one copy of the notice on a special Notice Board, in the prescribed manner, at a place where it may be inspected by trade unions officials and the workers employed at the place of work and shall ensure that the notice is kept on the Board for not less than fourteen days from the date of such pasting.

2. Where a Notice given under Sub-Section (1) above relates to an accident causing loss of life, the Inspector or authority shall make an enquiry into the occurrence, within two months of the receipt of the Notice.

3. Every person shall be bound to answer truly to the best of his knowledge and ability every question put to him, in writing, by the Inspector as to the cause, nature or exrent of the accident.

60. Advice of certain disecases.

1) Where any worker at a place of work contracts any disease specified in this behalf by the appropriate Board, the employer shall send notice thereof to appropriate Board, in such form and within such time, as may be prescribed.

2) If any medical practitioner attends on a worker employed at the place of work who is, or is believed by the medical practitioner, to be suffering from any disease mentioned in sub-clause (1), the medical practitioner, shall without delay, send a report in writing to the appropriate Board stating:

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(a) the name and address of the patient;

(b) the disease from which the patient is believed to be suffering; and

(c) the name and address of the place of work at which the patient is or was last employed.

61. Power to direct enquiry into cases of accident or disease.

1) The appropriate Board may appoint a person or persons as a Court of Enquiry to enquire into the causes of any accident occuring at a place of work or where a disease referred to in Section 50 of this Act has been or is suspected to have been contracted and it may also appoint one or more persons possessing legal or special knowledge to act as assessors in such enquiry.

2) The person appointed to hold any such enquiry shall hzv have all the powers of an Adjudicator, for the purposes of enforcing the attendance of witnesses and compelling the production of documents and material objects.

3) Any person holding an enquiry under this section may exercise such of the powers of an Inspector under this Act as he may think it necessary or expedient to exercise for the purpose of the enquiry.

4)The person holding an enquiry under this section shall make a report to the appropriate Board, stating the cause of the accident or disease and its circumstances and adding any observations which he or any of the assessors may think fit to make.

5) The appropriate Board may, if it thinks fit to cause to be published any report made under this section or any extracts therefrom.

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6) The appropriate Board may make Rules for regulating the procedure at enquiries under this Section.

62. Housing facilities.-

It shall be the duty of every employer to provide and maintain for every worker, residing at the place of work, necessary housing accommodation.

thereof, thereafter.

BODY PROTECTION:

1. Loose fittings sleepers when working should not be worn.

2. When welding, wear, the clothing which protects skin from hot sparks.

3. The safety hard hat must be worn at all times in construction erection and process areas and when performing mechanical work.

4. Safety goggles, safety spectacles and face shields (whichever applicable) must be used while working.

5. Shoes must completely cover the feet. If possible, use safety shoes, sandals, open toes shoes are unsafe.

6. Loose garments like dhotis and lungis must not be allowed for field work.

7. Safety belts above elevation on overhung location outside building or structure must be used. End of rope must be tied securely to some rigid support.

8. Wooden planks after bonds (packing) dismantling should be shifted to yard immediately otherwise wood can cause fire hazard and nails in planks can cause injury.

9. Gumboots, rubber hand gloves to be given to concerned civil construction group when this type of work persists.

10. Shutters removel should be done carefully and slightly Smaller size bambooes to be fixed before complete removal of actual used bambooes.

11. As excavation work should be properly cardoned with "Danger Sign Board".

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WORK SAFETY: EXCAVATION WORK.

Ordinary Earth Work:

1. All excavations to be carried out after location are cleared by Engineer-in-Charge.

2. Proper and adequate timber shorting and bracings as stipulated in the specification shall be provided to prevent sliding of loose or unstable earth, rock or other material or caving in of excavation.

3. Under cutting of banks of trenches and other excavation shall be avoided.

4. Excavated material shall be dumped sufficiently away from the edge of the excavated trench to avoid the slipping of the excavated material into the trench.

5. Deep Excavation going beyond 3 m depth shall be properly fenced to protect man from falling in.

6. Warning signals shall be placed near the excavation to warn the approaching traffic and men. At night, red danger light shall be displayed at a conspicuous place near the excavation.

Important Precautions, other than normal and general ones:-

Greatest care has to be taken in the use of explosions. The explosives now in use are the high pressure detonation types where the charge is required to be exploded by a detonator. In this type explosives, the detonator must be inserted in the primer cartrige of gelatine just before use to avoid an accidental explosion due to the fuse getting sparked off or the detonator exploding due to some pressure inadvertantly applied during handling.

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Tamporary of explosives should be done with wooden sticks gently to avoid explosion of the primer cartridge. The primer cartridge should never be the first in the hold, as it is inserted with the detonator and fired It is, therefore, safer to have another cartridge in front of it. In case only one cartridge is required to be used, then a soft clay stick should be inserted and well rammed before the primer cartridge is inserted. This will avoid sudden explosion due to accidential excessive pressure imparted to be detonator inside the primer cartridge.

For effective blast, the charge is always covered with clay sticks so that the gases at high pressure which have to shatter the rock do not escape. Some people use sand and gritty material as a short cut but this is wrong. This can lead to sudden explosion. In fact, no gritty material should ever be allowed to come in touch with the gelationes and detonators.

Crimping of the detonator over the fuse coil with proper crimpers is essential. There is a tendency for this crimping being done with teeth. This crimping is necessary to ensure that the fuse wire will not come out of the detonators. Misfires can result if crimping is not done properly. These are minor points which have to be inbuilt into the system of the persons using explosives.

The minimum length of the fuse if governed by the time interval desired between the ignition of fuse and the actual blast which should not be less than 2 minuties As some fuses burn faster (in any case, the rate should not exceed 60 cm/min) a 120 cm minimum length has been prescribed.

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Where electric detonators are used, each detonator should be tested with an ohm-meter for its rates resistance. It would thus be possible to avoid use of a defective detonator. If this is not done, the circuit will not fire when current is passed and the tedious process of determining the hole with the defective charge would have to be gone through. After all the holes have been charged, the entire circuit may again be tested for total resistance. As it is a series circuit, there should be no difficulty in assessing whether the entire circuit is alright.

Code of Good practice in Shot Firing:

1. Explosives and Detonators should always be separately kept or transported.

2. To deal with explosives only non-sparking materials like wood or brass should beused.

3. To check the shot holes with a scraper or stemming and before insertion of cartridges.

4. Not to force a detonator to a cartridge.

5. Removal all surplus explosives, vehicles, cover or remove equipments, removal of all persons from the site to a safe distance.

6. Install red class all round at a safe distance with guards to prevent proble to enter inside the Red Zone till all clearance is given by the shot fire.

7. Test the exploder before use.

8. While straightening the lead wires, do not hold the electric detonator by the tube. Grip the wires about 10 cm from the detenator with one hand and smooth them out with-other. This will avoid any pull on the fuse head.

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9. To avoid misfires, avoid damaging the insulation on the lead wires of the electric detonator.

10. To avoid misfires the conductors should be thoroughly cleaned free of grease or dirty wires. While making connections the bare ends of the conductors should be twisted together for a length of about 3 cm.

11. Twin core cables have two conductors. Stand of one conductor should not touch the other. Good practice is to stagger the exposed ends in relation to each other.

12. To ensure good insulation and avoid short circuits in wet conditions, use insulating tapes.

13. All connections should be done by shot-firer only. Exploder key should never be parted by him. Key should be removed after blasting and cable connection disconnected from the exploder and cable short circuited by twisting together the bare ends of the two conductors.

14. Exploder should be kept in a dry place and similarly the bare conductors.

15. All precautions should be taken against stray currents while blasting near electrically operated machine or high voltage power line.

General:

Explosive and detonators not to be kept together in the same box or magazine. Even while carrying to the site, these should be carried separately by different persons.

Even for opening boxes, wooden or brass implements should be used. No iron or steel implements should be brought anywhere near the explosives.

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One should not insert anything (not even a match stick) but a fuse inside a detonator.

During the thunder the lightening, no one should be near explosives. Every one should go away to a place of safety. This explains the need for effective lightening conductors on magazines.

A detonator should never be forced into a cartridge. The end should be first softened with hand a pricker used to make a hole, before the detonator is inserted. The softening of hardened cartridges however should never be done by hammering on the ground.

The exploder used should be of sufficient capacity generally 25 percent higher than required. The handle of an exploder should always remain with the blasting foreman or blaster who is in charges of the operations. In case filing is done from mains, separate switch should be available for this purpose. This switch should be in a box which can be locked, so that the key remains with the blasting foreman or the blaster whoever is incharge of the blasting operations. This is to avoid any accident by the current being passed through the circuit inadvertantly, before everybody has clearnd.

If there is a misfire, do not return to site before 5 min. for an electric blasting and 30 minutes for a fuse coil blast.

Mis-Fires:

If however, a mis-fire is to be dealt with the following should be remembered:-

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Misfire with fuse-coil firing:

If any fuse coil is outside the hole, which would afford sufficient time to the blaster to get away, the fuse may be lit again.

Mis-fire with electrical detonators, or if length of fuse is not enough.

Removal of stemming and recovery of charges: Blow out stemming by compressed air, if possible, or flush with wear through a rubber hose. Do not use any iron or steel tools or implements to dig out stemming. After the same is removed, try to put the primer and the charge gently. If this is not possible introduce a fresh primer and blast.

Relieving holes:

If method under above para is not feasible a relieving hole of length 30 cms less than the length of the misfired hole may be drilled at least 50 cms away from the misfired hole and blast taken through this. After blast, we should look out in the debris for the mis-fired detonator and cartridges.

Safety in tunnels:

The following considerations have to be borne in mind:-

Where supports, temporary or permanent are provided, the space between the tunnel roof and the support is well-packed, so as to allow any large movements in case subsidence takes place. Only a well packed supports can be effective in performing its function. A support which does not provide a through packing against the tunnel roof can only lead to a false sense of safety. The support must

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also be watched carefully for any movements due to pressure from top. It is possible to foresee signs of trouble, by way of cracked and split wooden posts (in case of temporary support) where the tunnel roof is likely to collapse. The support must be frequently inspected for any signs of distress. All support, temporary or permanent, must be adequately inter-connected to give loteral support as well. Where wooden lagging is used on top of permanent supports the void on top of the lagging upto the tunnel roofs must be well hand packed with rubble. This would make the support to the roof effective.

After every blast inside a tunnel, scaling of loose rock should be performed thoroughly by experienced staff, under the direct supervision of a competent supervisor, particularly near the periphery of the heading portion, because this would be inaccessible once the benching is done and any small rocks falling from this portion can cause serious injuries. Any loose boulders which are firmly wedged, but could drop out, should be rockbolted.

The tunnels must be well-lit. No economy in this direction would be worth-while. In fact, with better lighting, efficiency of all operation would go up; thus making up for the extra cost in lighting. In addition to this, several accidents could be avoided by better lighting. A 200 watt lamp every 20 to 25 meters or so would be adequate.

When a tram track is laid, it should be maintained to proper line and level. This would not only improve

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efficiency of making operations, but would also avoid injuries to workers. If a tram line is laid to too steep a gradient, the tip wagon can go out of control. In any case all the people operating tip wagons should be provided with whistles, so that a blowing whistle may indicate a moving tip wagon. The tip wagons must have efficient breaking system. Local improved breakes of wooden standards or poles have been found adequate. A tip wagon should not be overloaded. In case of a double track, the up and down lines must be clearly nominated. At the dumping point, the track should be well maintained and not kept over too high trestle support, as it would leave to topping of the tip wagon. In xxx any case, an iron clamp should be used to secure the tip wagon to the track before tipping, so that it does not overturn. A rerailing ramp comes in quite handy.

A tunnel should also be well drained of seepage water. Tunnels are generally on gradients. There is generally no problem from the lower end as the gradient helps the drainage for the portion driven from the higher end, drainage is a problem, as water would accumulate near the face, till the tunnel is through. There must be adequate arrangements for dewatering the tunnel face. Pneumatic sump pumps are quite useful. It should also be ensured that no short circuiting of current takes place through such pools of water.

Wet Drilling:

In tunnels, wet drilling must be resorted to. This not only gives extra life to drill rods, but also is a must to avoid health-hazards due to stone dust.

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Ventilation:

In short tunnels, of length upto 600 metres, generally no difficulty is felt, as the fumes after the blast clear out in about 30 minutes if the tunnel is not through. Nobody should be permitted to go in during this period. After the heading is driven through, the fumes clear in less than 15 minutes, as a draught is set in. The problem of ventilation is, therefore, only till such time a tunnel is being driven from the two ends without the heading having joined. Where the tunnels are longer and it becomes necessary to drive a tunnel from one end more than 300 meters, artificial ventilation with the help of exhaust fans and blowers should be necessary. The system could, however, be designed. This distance once again depends upon whether this is on a straight or a curve. The fumes in certain cases do not clear upto more than an hour.

Scaffods, Rigging and Hoisting:

Scaffolds should be built of sound material, accurately fastened and capable of supporting four times the combined weight of men and materials.

Guide rails and toe boards should be installed on all scaffolds which are 10' or more in height, and on all scaffolds immediately adjacent to excavation, deep water, machinery or other sources of danger. Proper cordoning of all hazzards with appropriate scaffolds is a must.

Piping and Tanks.

Use wire brush to remove cuttings from a pipe. Do not clean pipe threads with bare hands as they are sharp.

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While fitting extra heavy pipe and flanges and other fittings above 6" use chain hoist or crane.

Do not handle pipes/fillings with hands inside.

Before assembling pipelines and connections make sure that lines/equipments is free of original material such as dirt, tools and masonary material etc.

Testing of pipe with air nitrogen or any other gases to be done with proper authorisation.

Use proper scaffodings for erection. Do not work in unsecured ladder.

Take care in handling, emery and grinding wheels.

Use leather hand gloves while operating drill machines or grinders.

Pumps and other equipments must be blinded at open ends angle grinder use must be restricted to trained persons only.

While working in a tank only 24 voltage transformer to be used for lighting and one stand-by person must always remain outside.

Do not use drums for erecting pipes.

All tappings to existing line blank to be opened. The job supervision to be done by process.

After work, all left junk and tools to be shifted to their respective place.

Any dangerous condition to be reported to fire and safety Department.

Fire fighting equipments must be near to work place with free access.

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Safety Instructions for handling Electrical Works:

Proper grounding of all electrical equipments (stationery of portable must be done before energising).

All portable equipments like grinders, drill machines etc. must have proper plugs.

All 22.ov and 44 ov supply DB and plug points must indicate the voltage and proper instructions must be written.

All new connections from DB to be given and approved by Electrical Engineer.

Leather hand gloves to be used during use of all portable electrical appliances like drill and grinder etc.

No loose cable jointing is to be done.

The connecting cables should not fall on the way of movement (possible overhung). This causes hinderance in moving various equipment and cable gets damaged.

All electrical jobs to be done by qualified and liconced wireman.

Electrician should check before working on electrical equipment that circuit is dead and switch is tagged before working.

If any one comes in contact with live wires or cables and is unable to release his grip on wires; do not attempt to pull him off with bare hands, shut off the current. If it is not possible use rubber handgloves to release the victim or use dry stick to remove the wires.

Welding cables should be continuous and with proper insulation.

Use non-conduction ladders for electrical work.

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Properly inspected rubber gloves must be worn when working near live wires.

Never open or close a switch without full knowledge of current.

Safety Instructions - Electrical Equipments:

Electrical equipment and lines should always be considered as live unless they are positively known to be dead.

Line clears or "Permits to work" are to be taken for working on lines or equipments which are in service but disconnected from mains or supply for the purpose of carrying out work.

No employee should get up a pole or work on apparatus in service or in proximity to a live conductor, unless the man incharge of the work has obtained the necessary permit for work from the authority incharge of the apparatus or the lines.

Permits for works shall be taken only by authorised persons and shall be issued by the authorised persons incharge. The person who took the permit should himself return it and this procedure should be followed, even when the issuer and receiver happen to be the same. When the clears are taken in person, the employee taking the line clear should follow the employee doing the isolation, discharging etc., and satisfy himself that the equipment on which he has to work, is isolated from the mains, on either side as seen visually, and grounded before he acknowledges the lines clear.

Whenever works are to be carried out with lies clear on certain equipment, with adjacent equipment alive, a 25 mm manila rope may be tied round the danger size at a height

of say, I from the ground and boards painted with the words "DANGER" written both in English and in Vernacular in red colour hung at convenient distance.

Arc Welding:

Frames of all electrical welding machines operated with power circuit shall be effectively grounded.

Switch 'off' the welding whenver actual welding operation is stopped and switch it 'on' only, when the actual welding operation is to be started.

Welders and helpers shall wear overall suits, rubber shoes and gloves on both hands, so as to reduce the chances of any part of the body coming in contact with any live portions to the minimum.

Welders shall wear protective device for their eyes, and other persons nearby shall be protected from the arc rays by screens. Helpers to welders must wear safety goggles. Electric arc when viewed with naked eyes cause serious impairment to vision.

GAS WELDING:

Oxygen cylinders shall not be stored in close proximity to accetylene cylinders or other fuel gas inside the building, and is no circumstances, either oxygen or acetylene cylinders shall be stored under direct rays of sun or in places, where excessive rise of temperature is likely to occur.

Tempering with or attempting to repair safety devices or valves of gas cylinders shall be prohibited, and if trouble is experienced in any cylinder, a report

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shall be sent to the supplier forthwith, describing the character of the trouble and particulars of the cylinder.

The valves of cylinder shall be kept closed firmly, when cylinders are not in use.

Leaking cylinders shall be removed to the open air, as soon as possible and disposed off in such a manner so as to prevent any possibility of ignition of the leaking gas.

Oxygen cylinders and fittings shall be kept free from oil or greasy substance, and shall not be handled with oily hands or gloves.

Oxygen cylinders should be handled with extra care. They should not be dropped and should not be permitted to fall even or to be struck by other objects.

Gas cylinders shall be kept upright in approved safe place where they cannot be knocked over and well separated from rediators, furnaces and combustible materials.

Discharged cylinders shall be marked "EMPTY" and shall be handled with the same care as loaded cylinders. Loaded and empty cylinders shall be kept in separate places.

The hose used for the oxygen and acetylene cylinders, should be made of high pressure rubber with different distinct colours, Special care should be taken to avoid inter change of oxygen and acetylene hoses, as the mixtures of these gases are highly explosive.

Armour cover or wire-wrapped hose shall never be used to connect torches and tanks.

GAS WELDING AND CUTTING.

Welders and helpers shall wear non-combustible helmets and gloves during welding operations. They should

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be careful to keep out of the line or sparks and hot metals, and they should wear clothing free from grease, gasoline, oil and other inflammable materials.

Suitable goggles and helmets shall be worn by welders and helpers during welding and cutting operations.

When welding and cutting process are to be commenced, the cylinder valves shall be opened only with the special wrench provided for that purpose. This wrench must be in position on the valve stem, while the cylinder is in use, so that the gas may be turned off quickly in case of emergency.

All welding operations should be carried out in a well ventilated space.

Smoking by workmen or welders is strictly prohibited while they are handling gas cylinders.

Closed tanks or containers shall never be welded until they are, thoroughly cleared, dried out, and ventilated and after ascertaining, that they contain no explosive or harmful.

LIFTING TACKLES:

Keep away from cables, ropes, or chains under lead.

In lifting heavy machinery, only standard safe load for ropes, cables or chains should be lifted; no over-loading shall be done.

The slings should be of approved type.

Never stand under heavy loads.

Never keep the load suspended for any length of time more than that which is absolutely necessary.

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No person shall climb on to any crane or other lift in machines without the knowledge of the driver operating the crane or lifting machine.

Loads must not be lifted over groups of workmen till they have been notified and allowed to clear. The load should not be kept suspended in the sling for any length of time, than what is absolutely necessary.

Hoising and Equipments:

All ropes, hooks and chain-pully blocks to be examined for defect before putting in services.

Do not allow kinks to form in uncoiling wire rope and check for broken wires periodically.

Each person handling heavy lifts should know how to tie the rope knots properly and safely.

All slings should be protected by pads or blocks; where these are subjected to sharp edges examine them before use.

Men should not be allowed to climb on blocks, hooks or suspended load. They may be hoisted in an approved sling or chain.

Hoisting equipment operator should keep their eyes on man giving signals.

When handling heavy loads with mobile cranes having pneumatic tyres to be operated on hand firm ground and good blocking to be done.

Guy lines must not be fastened to operating equipment, pipelines, tanks or other supports without proper permission.

Defective ladders should not be used.

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Place ladders at a safe angle so that they cannot fall backward or slip at the bottom.

Another man will have to hold a step ladder when the work to be done involves considerable pulling, pushing or other types of activities which may cause the ladder to shift or topple over.

Never brake suddenly with a load unless in an emergency.

Never turn suddenly when trav lling with a load at speed.

Always watch the overhead clearances are sufficient.

Never booms beyond capacity of cranes, fork lifts etc.

crane booms should be lowered to the ground when there is danger of high wind or idle conditions.

Extreme caution to be taken while working near high voltage lines in cranes. In case of height work, arrangement for sufficient lighting must be made.

HANDLING OF TOOLS AND PLANTS.

Always use the right tool for the work. Use a correct size spanner for tightening or loosening bolts and nuts to prevent slipping of spanner.

Test the handle of the hammer before use. Never use hammer if the handle is broken or the bend is loose, Do not allow on unexperienced person to handle sludge hammer.

Proper understanding is essential between the person holding the chisel, and the person using the hammer, and never divert the attention of hammer-men while in action.

Keep the tools perfectly clean always, uncleaned tools, mostly soaked with oil, may slip from hand, resulting in an accident.

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Improper using of hand tools, neglecting to keep them in safe working condition and carelessly leaving them around where they may endanger persons, are frequent causes of accidents.

All tools shall be maintained in good working condition. Burred heads shall be promptly redressed. Broken, cracked or otherwise damaged handles shall be replaced. All tools with sharp edges should be kept in sheats, shields, tool chests or other containers, when not in actual use, so as to protect the tool, the worker and other persons.

PERSONAL SAFETY.

SAFETY BELT.

Safety belts should be inspected carefully and periodically for condition of leather, leather near holts, rivers, switches, buckles, rings, strips etc.

Safety belts made of leather must be kept pliable, by treating them occasionally with a suitable penetrating oil like castor oil.

The safety belts must be stored in a satisfactory manner in proper compartments to protect them and to prevent them from being out by tools, robbed by files and from being caught under heavy line material.

Each day before a helt make sure that it shows no defect.

If a belt is accidentally cut, it should be discharged immediately.

Never drive holes in a leather belt or strap. If extra holes are required, use a regular belt punch to form the

holes. No two holes punched should be nearer than one inch.

Wipe the belt off, with a clean rag after work in rain, and allow it to dry at room temperature.

Never expose a safety belt to heat from coils of radiators. Keep in out of the range of blow furnaces and other sources of hear.

Belts should never be droped, or thrown from a height to the ground.

ROPES.

Fibre ropes are made principally of manila fibre, sisal fibre and hemp. Frequent inspections are required in the use of ropes to see that the interior fibres are not broken, or ground to powder, while the exterior indicates that the rope is but a little worn.

Avoid use of rope with fibre core, when the rope is subject to heat, fumes and extreme pressure. Chose right construction of rope suitable for the job, Corrosion can be delayed by using galvanised rope.

Don't load the rope beyond its safe working load. Ensure that the rope is strongly seized before it is cut.

Flexibility of rope should be suitable to the size of drums and pulleys, and diameter or rope to grooves.

Rope must be uncoiled so as to avoid 'kinking' since even a moderate strain on a rope, in which there is a kink may over-stress the fibres at the kink. After the work, neatly coil the ropes

Wet rope deteriorates rapidly unless dried properly. It should be hung up in loose coils, so that dry air can circulate through them. Heat should never be applied, as

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it dries out the oil and thus shortens the life of the rope. Wet rope has a tendency to form kinks. No load should be applied until all kinks are removed.

All ropes are easily damaged by acids or alkalis. Any rope known to have been exposed to acids or alkalis (sometimes indicate by discaleration of strains) should be used with caution.

When rope is running over a sheaver or a puley, internal wear is caused by friction. The life of rope is greatly prolonged, by using blocks with sheaves of large diameter.

Fibre rope should always be clean, before being placed in storage and should be stored in a dry, airy place. It should never be stored in the same room with acid or caustics,

SAFETY INSTRUCTIONS FOR OPERATIONS OF GRINDING MACHINES.

GENERAL INSTRUCTIONS.

GUARDS:

The bursting of revolving abrasive wheels frequently results in serious injuries. To obviate this risk it is imperative that the GUARDS SHOULD ALWAYS BE IN POSITION WHEN THE WHEELS ARE RUNNING.

On certain types of internal grinders the fixing of Guards is no practicable operators of these machines should take care that UNDER NO CIRCUMSTANCES SHOULD THE SCHEDULE SPEED BE EXCEEDED.

Note:- Guards should be constructed of rough-iron or steel. The use of cast iron should be avoided as this will not resist the effects of a burst and considerable danger will arise from the flying pieces.

Goggles.

WHERE GOGGLES ARE PROVIDED? THESE SHOULD ALWAYS BE WORN.

Eye injuries are a prolific form of accident and are due in nearly all cases be the operator not wearing the goggles provided.

SHOCK TREATMENT AND FIRST AID.

All employees must be capable of giving first aid to the injured, and converscant with all the methods of artificial respiration.

In case of accident suspected due to electric shock proceed as below:

Switch off supply as quickly as possible; if that would involve more time than putting the patient away, do the later.

Standing on a dry, insulated surface like a wooden chair, rubber or coir matting, separate from the electrical contact using a dry stick, dry rope, dry cloth paper or other non-conductors. On no account, should bare hands be used.

Where accident is on H.I.line or equipments, special care has to be exercised. Inform the nearest medical centre. Arrange for quick transport to the centre. The names, addresses and telephone Nos. of doctors, hospitals, within easy reach of the station/works should be maintained.

If the affected person is apparently not breathing, proceed to give artificial respiration without delay. Every moment of delay is serious.

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Any foreign body (tobacco, flase teeth, chewing gum etc.) should be removed from the victim(s mouth and throat carefully. Reassure the casualty if he is conscious.

ALWAYS
ALERT
AVOID
ACCIDENTS

GENERAL SAFETY RULES.

It is the reponsibility of Construction Manager/ Engineer to ensure that copies of these Rules applicable to their own sites are prominently displayed in English and vernacular in the department and are readily available to workers at all times.

Whenever any unsafe and dangerous condition is noted it should be reported immediately to the Engineer in charge and/or the Safety Officer.

Any injury, no matter how slight must be reported to the Engineer in Charge immediately who will arrange for your treatment.

Drums or other make-shifts should not be used in place or ladders or as work benches or supports for any job.

Excavations inside the compound or department must be properly fenced and marked with suitable warning sign boards at all times. This also applies to any trench or drain which has a cover removed. If ladders or handrails are removed, safety ropies must be placed around to eliminate the danger of falls.

Goggles of face shields must be used when working on emery wheels of chipping metal etc. Or any other job where there are possible eye hazards.

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Gloves must never be worn while grinding materials on an emery wheel. Gloves should not be used when operating machinery except with the permission of the Departmental Head.

Ladders with broken or missing rungs or split side rails or otherwise defective or without safety shoes or hooks must not be used. Ladders when erected must be tied at the top with a rope.

Before any person is allowed to work on a roof or in an enclosed place or in a manhole, or any hazardous place permission for doing such job there must be obtained from the Management who will ask the safety department or the departmental Head concerned to take such precautions as he may deem fit.

When working on asjestos covered roofs, proper boards like crowling boards or cat ladder must be used to support your weight.

Before any work is commenced in an enclosed space or in a manhole, such a place must be kept open for at least hours.

When working in an enclosed place or in a manhole, or belt around the waist or belt with one and outside the manhole by one or were stand-by personnel why will keep a watch in order to pull out the worker should be in difficult or overcome by gas.

Defective tools e.g. chisels with mushroom heads, spanners with worn jaws, broken file handles, hammers with broken shaft, etc. must be brought to the notice of the supervisor in charge immediately.

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Rules for material handling.

Materials of any kind must not be thrown from or to any height. If such a procedure is necessary, the particular area must be fenced to keep off others from this area.

The unloading and loading of gas cylinders, drums, carboys etc. must be carried out with care. There should not be allowed to be dropped or come into violent contact with one another.

Materials should be stacked carefully, tidily and upto a safe height and should be properly secured.

Rules for preventing machine hazards.

All guards on the machines and rollers must be in position before starting any machine.

See that everybody and everything is clear before starting up machine. Make sure no one is in a position to be injured as a result of your act.

Stop machine before oiling, adjusting, inspecting or cleaning it.

When working in grinding wheels; (i) check that the safety shield is correctly set (ii) ensure that the wheel is running true (iii) see that the tools rest is fixed within one inch from the wheel.

When repairing a machine, keep all small trays and not on the floor.

Use goggles or face shields provided machining etc. to proper your eyes.

Do not tamper or interfer with any machinery that you are not operating or repairing.

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Do not attempt to operate or set in motion any machine or equipment to which you are not assigned.

Use machines, guards and other equipment with care. Report at once to your supervisor any damage or fault or any sound.

Rules for Electric Hazards Prevention.

Unskilled men must never be allowed to attempt to repair electrical apparatus.

Only authorised persons may operate any switch gear apart from routine stopping and starting of motors and lighting.

When electrically driven machines and apparatus are shut dow. for repairs, the electric circuit must be isolated before commence.

Rules for chemical hazards prevention.

Any leackage observed from drums, jars, packages, caryboys or cylinders etc. must be reported immediately to the Departmental Haad or his Assistants. If leackes are from packages containing acid, caustic soda or other arrosives, steps must be taken to stop other persons approaching the location.

Should you be splashed with acid, caustic or other chemicals, wash yourself with water, flooding the affected part of the body and immediately report a to the dispensary for attention.

General Safety Recommendations.

Good house keeping will save you from many avoidable injuries. (i) keep your tools and surroundings clean, free

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from oil and grease and your equipment in its proper place (ii) be careful to clean up a job after finishing it. All theft over junk is to be removed to the proper place.

Be sure, you know how to do a job before you start it or if in doubt, consult your superior.

Never look directly into the area produced during welding without proper eye protection.

Producing nails should be pulled out or bent over or knocked down before you throw anything out for scrap or pass materials on. Look out for sharp edges and splinters.

Do not ever reach when working on a ladder.

When asconding or descending a ladder, face the ladder and obtain a firm grip with both hands. Carry tools or materials in such a way so as to provide free use of your hands.

Use your tools with care. Do not put them to use they are not meant for e.g. using spanner as a hammer or a knife as a screw driver.

Do not throw tools from one man to another. Instead, hand them over.

Recommendations for electric hazards prevention.

Knowledge of how to give artificial respiration is very useful to all. Instructions and practice in artificial respiration must be given to all workers, supervisors and engineers.

Never use water for extinguishing electrical fires. Use always CO2 type of CVC type of fire extinguisher for extinguishing electric fires,

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Do not use any grade of petrol or turpentine oil or any other inflammable liquid or corrosive chemical for cleaning purpose.

Report all skin irritations to the dispensary immediately.

Rules for the prevention of fire hazards.

Smoking is not allowed in the prohibited areas.

Fire fighting equipment is not to be put to other uses, Except fire fighting. Fire buckets are not to be misused.

The safety officer must be informed early when any fire equipment has been used or misused so that replacement could be effected early.

Deposit all oily.

Complete precautions against fire must be taken before doing any welding or cutting works.

57. Excessive weights.

No person shall be employed in any place of work to lift, carry or move any load, so heavy as to be likely to cause him injury.

The Central or the State Boards, as the case may be, may make Rules prescribing the maximum weights which may be lifted, carried or moved by adult men, adult women, adolescents and children employed in place of work or in any class or discription of places of work or in carrying on any specified process.

58. Safety of Buildings and Instructions.

1) If it appears to the Inspector that any building or part of a building or any part of the ways or machine at a place of work is in su a condition that it is

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dangerous to human life or safety, he may give to the employer, at the place of work, instructions, in writing, specifying the measures, which, in his opinion, should be adopted, and requiring them to be carried out before a date to be specified in the instructions.

2) If it appears to the Inspector that the use of any building or part of a building or any part of the ways or machines in place of work involves imminent danger to human life or safety, he may give to the employer, in writing, at the place of work, instructions prohibiting its use, until it has been properly repaired or altered.

59. Notice to be given of accidents.

1. Where at any place of work, an accident occurs -

(a) causing death or bodily injury, by reason of which the person injured is prevented from working for a period of 48 hours or more immediately following the accident, or

(b) an explosion, ignition, spontaneous heating, out-break of fire or irruption or inrush of water or other liquid matter, or

(c) an influx of inflammable or noxious gases, or

(d) a breakage of ropes, chains or other gear by which persons or materials are lowered or raised in a shaft or an incline, or

(e) an overwinding of cages or other means of conveyance in any shaft, while persons or materials are being lowered or raised, or

(f) a premature collapse of any part of the working or

(g) any other accident which may be prescribed.

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The employer at the place of work shall send notice of the accident or occurance to the Inspector of the area concerned in such form and within such time, as may be prescribed, and he shall also simultaneously paste one copy of the notice on a special Notice Board, in the prescribed manner, at a place where it may be inspected by trade unions officials and the workers employed at the place of work and shall ensure that the notice is kept on the Board for not less than fourteen days from the date of such pasting.

2. Where a Notice given under Sub-Section (1) above relates to an accident causing loss of life, the Inspector or authority shall make an enquiry into the occurrence, within two months of the receipt of the Notice.

3. Every person shall be bound to answer truly to the best of his knowledge and ability every question put to him, in writing, by the Inspector as to the cause, nature or exrent of the accident.

60. Advice of certain disecases.

1) Where any worker at a place of work contracts any disease specified in this behalf by the appropriate Board, the employer shall send notice thereof to appropriate Board, in such form and within such time, as may be prescribed.

2) If any medical practitioner attends on a worker employed at the place of work who is, or is believed by the medical practitioner, to be suffering from any disease mentioned in sub-clause (1), the medical practitioner, shall without delay, send a report in writing to the appropriate Board stating:

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(a) the name and address of the patient;

(b) the disease from which the patient is believed to be suffering; and

(c) the name and address of the place of work at which the patient is or was last employed.

61. Power to direct enquiry into cases of accident or disease.

1) The appropriate Board may appoint a person or persons as a Court of Enquiry to enquire into the causes of any accident occuring at a place of work or where a disease referred to in Section 50 of this Act has been or is suspected to have been contracted and it may also appoint one or more persons possessing legal or special knowledge to act as assessors in such enquiry.

2) The person appointed to hold any such enquiry shall hzv have all the powers of an Adjudicator, for the purposes of enforcing the attendance of witnesses and compelling the production of documents and material objects.

3) Any person holding an enquiry under this section may exercise such of the powers of an Inspector under this Act as he may think it necessary or expedient to exercise for the purpose of the enquiry.

4)The person holding an enquiry under this section shall make a report to the appropriate Board, stating the cause of the accident or disease and its circumstances and adding any observations which he or any of the assessors may think fit to make.

5) The appropriate Board may, if it thinks fit to cause to bo published any report made under this section or any extracts therefrom.

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