



C A D P

SAFETY CODE

Atty. Lorenzo Maramba, Jr.
CENTRAL AZUCARERA DON PEDRO
Nasugbu, Batangas

CADP SAFETY CODE

CADP SAFETY CODE has been prepared and issued for the sole purpose of preventing accidents, which result in injuries to our employees and damage to company property.

Top management has always regarded our employees and their skills as the most important resource and valuable asset of the industry so that every possible and practical safeguard should be provided for their protection.

Accidents are costly. Substantial savings can be realized by preventing them.

The instructions and general safety rules contained in this code have been formulated by the Environmental Management and Safety Department after giving a great deal of thought to the various factors which make up for safe and accident-free working condition in the various plants and work units of **Central Azucarera Don Pedro**.

It is our hope that you will read this **Safety Code** carefully and refer to it frequently, so that you will be guided accordingly in order to prevent accidents to yourself and your fellow employees.

CONTENTS

CHAPTER		PAGE
1	General Information Company Safety Policy General Responsibility Plant Management Responsibility Supervisor's Responsibility Worker's Responsibility	1
2	Good Housekeeping	5
3	Materials Handling Handling Materials Storage	7
4	Machine Guarding Machine Guard Working Around Machinery	12
5	Electrical Safety	16
6	Hand Tools Safety	20
7	Special Equipment Safety Scaffolds and Ladders Heavy Equipment	23
8	Chemical and Gases Handling of Chemicals Laboratory Work Combustible Gases	26

CHAPTER		PAGE
9	Machine Shop Practices	29
	Machine Shop	
	Machine Tools	
	Gas Welding and Cutting	
	Arc Welding and Cutting	
	Rule 1100: Gas and Electric Welding and Cutting Operations	
10	Personal Protective Equipment	39
11	Boilers and Pressure Vessels	41
	Boilers	
	Unfired Pressure Vessels	
12	Working in Confined Spaces	45
13	Office Safety	47
	Office Behavior	
	Office Equipment	
14	Construction Safety	50
	Structure Demolition	
	Excavation	
	Good Housekeeping at Construction Site	
	Site Clearing	
	Woodwork	
	Pipework	
	Public Safety	
	Painting	

CHAPTER		PAGE
15	Fire Prevention and Control	58
	Fire Prevention Practices	
	Flammable and	
	Combustible Liquids	
	Portable and Manual Fire	
	Control Equipment	
	Care of Fire Hose	
16	Vehicle and Land Traffic Safety	66
	Safe Driving	
	Parking Area and Garage	
	Loading and Unloading of Trucks	
	Reporting Traffic Accidents	
	Involving Company Vehicle	

CHAPTER 1 - GENERAL INFORMATION

1.1 COMPANY SAFETY POLICY

The management of Central Azucarera Don Pedro (CADP), conscious of its obligation to protect and preserve its resources especially the welfare and safety of its employees and control losses at manageable level in order to attain its production goals with a fair return of its investments, hereby declares this **Company Safety Policy**.

Management headed by the President believes that personal injury and damage to property caused by accidents are unnecessary that can make or break the company thereby all available and practical means shall be taken for their prevention.

Management regards safety as its primary responsibility thereby all phases of planning and operation must comply with safety regulations.

The Vice-Presidents and the respective Department Heads/ Superintendents under their Divisions are fully responsible for the maintenance of safe working conditions and the carrying out of the safety and health programs of the company.

Supervisors in all levels are directly responsible for safety. It is their duty to inspect and correct unsafe work practices and unsafe conditions in the workplace, investigate and report all accidents; develop and maintain a good safety disposition in their subordinates.

The Safety Officer is responsible for assisting and advising Management on all matters pertaining to safety in compliance with Occupational Safety and Health Standards of the government.

Finally, every employee is responsible for his own safety. It is his duty to observe and follow safety rules, regulations and practices to make safety a part of his life.

(SGD.) MIGUEL ANGEL GASPAR
PRESIDENT - COO

1.2 GENERAL RESPONSIBILITY

- a. Each and every employee is required to study and observe the rules provided in this code, particularly those applying to his duties.

1.3 PLANT MANAGEMENT RESPONSIBILITY

- a. Plant Management should provide the guidance necessary for the implementation of this code.
- b. Plant Management should provide the equipment as required for the effective implementation of the provision of this code.
- c. Plant Management should set the disciplinary action against violators of this code as deemed applicable by their respective work units.

1.4 SUPERVISOR'S RESPONSIBILITY

- a. Each supervisor shall see to it that employees under his direct supervision observe safety rules embodied in this code.
- b. Where other safety precautions are necessary in the performance of a particular job, the supervisor or the employee shall undertake said necessary precaution to insure safe work operations.

1.5 WORKER'S RESPONSIBILITY

- a. Obedience to safety regulations while on duty is the responsibility of every person employed. Cooperation to the Safety Program is essential for the efficient performance of any job.

- b. Any person in doubt as to the correct meaning and interpretation in any rule as set forth in this set of rules must secure an explanation from his immediate superior.
- c. Accidents can happen through inexperience and insufficient training. If you do not know the correct manner of doing a job, ask your superior for instruction. It is always better to ask than to suffer an injury through not knowing.
- d. Report immediately all unsafe conditions and unsafe tools or equipment to your superior, to the Environmental Management and Safety Department, or to the Safety Officer in the field, as this will prevent accidents. Supervisors must see to it that corrective actions are taken.
- e. No intoxicating liquor shall be brought or consumed at working places. Persons found on duty in an intoxicated condition, or carrying intoxicating liquor on the job, will be subjected to disciplinary action. A person who comes to work in an intoxicated condition will not be allowed to enter job premises.
- f. Always obey safety signs placed throughout the premises, as these have the purpose of warning personnel of existing hazards.
- g. Pay strict attention to your work. Practical joking or horseplay is prohibited.
- h. Any injury suffered by an employee, no matter how slight, must be reported at once to the employee's immediate supervisor or superior and treated at the CADP Hospital.

4

CHAPTER 2 - GOOD HOUSEKEEPING

- 2.1 All loose objects that may involve stumbling hazards should be removed from the floor immediately, especially on or in the vicinity of passageways for personnel or vehicles, stairways, ramps, etc.
- 2.2 Clean up or remove immediately any grease, oil or other liquids spilled on the floor, on order to prevent slipping hazards. Avoid spilling such liquids.
- 2.3 Never leave unprotected floor openings. If the job has not been completed, a suitable protection should be placed around it. In addition, warning lights should be installed at nighttime if such openings are in public roads or traffic passageways.
- 2.4 Repair and maintenance personnel are required to clean up the place after their job is completed. This includes scraps of metal or wood, refuse, sawdust, wood shaving, wires, oil rags, spilled liquid, etc.
- 2.5 Never leave protruding nails where they can be stepped on by other persons. If nails cannot be pulled out or bent immediately, pieces of lumber with protruding nail should be piled out of the way with nails facing down, until they can be transported to a more suitable location.
- 2.6 Always keep your workbench, toolbox, drawer or locker orderly manner. Acquire the habit of keeping tools in proper racks, or in such a manner that they will not cause injuries to yourself or others.

5

- 2.7 Oily waste or rags should be disposed of in covered metal containers, as there exist the danger of spontaneous combustion. For this reason, they should not be left in open containers or inside lockers.
- 2.8 Waste cans should be emptied daily.
- 2.9 Cooperate for the better appearances of your place of work, and your improved personal comfort, by keeping toilets, rooms and sanitary appliances clean and orderly at all times.
- 2.10 Broken glass is dangerous. Do not pick up with bare hands: SWEEP IT UP. Do not throw broken glass away into waste paper basket, but in metal trashcans.
- 2.11 Round goods or material like drums should be blocked from rolling. Gas cylinders should be in upright position, and when located in a moving vehicle, should be chained.
- 2.12 Levers or cuttings of the job such as lumber, scrap metal, welding butts, etc., should not be left scattered around as they pose tripping and falling hazards. They should be properly disposed of or stored if still usable.
- 2.13 Aisles and passageways should be properly lighted, marked and free from obstructions.
- 2.14 Accumulation of all types of dust should be cleaned at regular intervals from overhead pipes, beams, ledges and machines.
- 2.15 Parking and loading areas should be properly marked.
- 2.16 Outside (yard) storage should be well arranged.

CHAPTER 3 - MATERIALS HANDLING & STORAGE

Handling Materials

- 3.1 To avoid painful back injuries, LIFT WITH YOUR LEGS, not with your back. In other words, bend your knees and keep your back straight.
- 3.2 Do not load, beyond its rated capacity, any device for handling or transporting materials (cranes, trucks, elevators, cages, etc.).
- 3.3 Never stand under suspended loads or material being hoisted.
- 3.4 No person should attempt to lift or carry load beyond his strength and ability to handle it safely. Get help if necessary, as this will prevent painful injuries resulting from over exertion.
- 3.5 Two or more persons carrying long material (piece of lumber strengths of piping, bundles of metal rods, etc.) should always transport on the same shoulder.
- 3.6 When carrying long objects on shoulder (one-man carry), raise forward end to clear heads of other persons, especially when reaching blind corners.
- 3.7 Never carry a material in such manner that will obstruct your vision of way ahead. This is especially important when going down or up stairways, manways, runways, ramps, etc.

CHAPTER 4 - MACHINE GUARDING

Machine Guards

- 4.1 Any guard should have the following characteristics to be fully effective:
- Afford maximum positive protection.
 - Prevent access to the dangerous zone during operation.
 - Be convenient; it must not interfere with the efficient operation of the machine nor cause discomfort to the operator.
 - Be designed for the specific job and specific machine, with provisions made for oiling, inspection, dusting and repairing of the machine parts.
 - Be durable, resistant to fire and corrosion, and easily repaired.
 - Be constructed strongly enough to resist normal wear and shock, and withstand long used with minimum maintenance.
- 4.2 Any portion of a flywheel 7 ft. or less from the floor or platform should be guarded with an enclosure of sheet metal or rail guard.
- 4.3 Railings should be placed not less than 15 in. nor more than 20 in. from the rim of the wheel. It should not be less than 1 in. high. Standard toeboards should be provided from any flywheel, which extends into a pit or is within 12 in. of the floor.
- 4.4 Regardless of the diameter of a flywheel, if any portion of it protrudes through a working floor, that portion should be entirely enclosed or surrounded by a railguard.
- 4.5 Shaft couplings should be provided with covers or sleeves.
- 4.6 Exposed portions of horizontal shafting 7 ft. less from the floor or working platform, exclusive of runways used only for oiling or adjusting, should be enclosed by a three-sided trough or stationary casing.
- 4.7 Vertical or inclined shafting should be enclosed to a height of 7 ft. above the floor or working platform.
- 4.8 Any portion of a pulley that projects below a point of 7 ft. above the floor or platform should be enclosed to that point.
- 4.9 Pulleys regardless of speed should be enclosed at least to the in-running nip point.
- 4.10 Horizontal transmission belts 7 ft. or less from floor levels, travelling in excess of 250 fpm should be enclosed.
- 4.11 Vertical and inclined belts on any width and at any speed in excess of 250 fpm should be enclosed to a height of 7 ft.
- 4.12 Gears, sprockets and chain should be protected by one of these means:
- A complete enclosure on all sides with no opening in the guard exceeding $\frac{1}{2}$ in., if the guard is within 4 in. from the gear.

- b. A woven wire or expanded, perforated or sheet metal guard at least 7 ft. high, placed between 4 and 15 in. from the moving gear on all sides.

Working Around Machinery

- 4.13 Machine guard shall not be removed except for the purpose of inspection and repairs to the machine guards or machinery. Guard should not be removed while machine is in operation. After such repairs have been completed the guards shall immediately be replaced.
- 4.14 Machine should not be started unless the guards are in place and in good condition. Defective or missing guards should be reported to the foreman at once.
- 4.15 Whenever safeguard devices are removed for repair, adjustment or to service equipment (lubrication and maintenance), the power for the equipment should be turned off and the main switch locked and tagged.
- 4.16 A danger tag or lock shall be removed from a switch or other control etc. only by the person who so placed it.
- 4.17 One must not depend on a tag or tags placed by men from another department, they must be protected by their own individual or party tags.
- 4.18 Tags must be placed on the control machine, etc. only when such equipment is in the correct non-dangerous position and placed so that they will not become detached or destroyed.

14

- 14.19 No switch, valves or other machinery and controls shall be operated when a danger tag is attached.

14.20 Never operate a machine or mechanical equipment without the proper authority.

14.21 Do not leave machinery running unattended.

14.22 Only electricians must repair electrical equipment. Needed repair must be reported to the foreman or electrician on duty.

15

CHAPTER 5 - ELECTRICAL SAFETY

- 5.1 Only authorized person shall make repairs or work on electrical equipment.
- 5.2 Steam, eater or oil leaks near electrical equipment shall be reported immediately to the supervisor-in-charge.
- 5.3 Electrical equipment, which is heating or sparking excessively, shall be cut out and an electrician called to correct the condition.
- 5.4 Working surfaces shall be kept dry when working with or near electrical apparatus.
- 5.5 The frames of all portable electrical equipment must be securely grounded before use.
- 5.6 Equipment or machinery shall not be operated within ten (10) feet from any high-tension power line.
- 5.7 All electrical wires must be considered live until proven that they are not.
- 5.8 A switch shall not be closed without full knowledge as to why the circuit is open. Only the person who tagged the switch open shall remove the tag on a switch.
- 5.9 Only explosion proof motors and/or vapor-proof fixtures, extension lights, and/or flashlights, shall be used in gaseous atmospheres.

16

- 5.10 All portable extension lamps must be provided with guard. Do not use lamps with frayed or worn extension cords.
- 5.11 Substantial insulation, grounds or other protection shall be provided during operations to protect employees from injuries resulting from temporary or permanent electric wiring or apparatus.
- 5.12 Wiring equipment such as fastenings, connections, etc. where accessible to workmen shall be nonconductive and/or where conductive equipment is used, the same small is guarded so as to protect workmen against injury.
- 5.13 No work shall be done on any wiring or equipment carrying 600 volts or over until the portion being worked upon is protected on both sides by grounds, blocks, by-passes, hold-off systems or by other effective means.
- 5.14 All work on electric wiring or equipment carrying 600 volts or more, shall be performed by men competent and qualified in high voltage installations.
- 5.15 Suitable insulating mats or platforms of substantial construction and providing good footing shall be so placed on floors and, if necessary, on the frames of the machines having exposed five parts of more than 150 volts to ground, that the operator persons in the vicinity cannot readily touch such parts unless standing on the mats, platforms or insulating floors.

17

- | | |
|---|--|
| <p>5.16 Overloading of electric circuits is prohibited. All circuits shall be fused or have circuit breakers adjusted for the designated safe load.</p> <p>5.17 The use of slugs or jumpers on circuit breaking devices is prohibited.</p> <p>5.18 When temporary wiring is used in tanks, cofferdams or other confined spaces, an approved type switch shall be provided at the entrance of such spaces for cutting off the current in emergencies.</p> <p>5.19 When maintenance or repair work must be done on energized conductors, it is advisable to have two or more employees work together.</p> <p>5.20 The use of temporary wiring should be discouraged even though it may be reasonably safe when first put in.</p> <p>5.21 When additional equipment is being installed or operated under temporary conditions, no taps should be made into an existing circuit unless an individual switch is installed in the branch line.</p> <p>5.22 Rubber gloves should not be used as a substitute for safety devices or procedures, but are worn as a supplementary measure.</p> <p>5.23 Warning signs should be displayed near exposed current-carrying parts and in especially hazardous areas, such as high voltage.</p> | <p>5.24 Good illumination should be provided for the front and rear of switchboards and maintained ready for use at all times.</p> <p>5.25 Switches, fuses and automatic circuit breakers should be plainly marked and arranged to afford ready identification of circuits or equipment supplied through them.</p> <p>5.26 When installed along passageways, switchboard panels should be protected by guardrails or barriers.</p> |
|---|--|

CHAPTER 6 - HAND TOOLS SAFETY

- 6.1 Select the right tools for the job.
- 6.2 Never substitute proper tools, material or equipment. Use only approved implements provided for performing the job safely and well.
- 6.3 Use tools the right way with proper positioning, system operation and movement consideration.
- 6.4 Tools must be removed from the work place when the job has been completed.
- 6.5 The tool bucket should be kept free from broken glass, broken pieces of porcelain, nails and other materials, which might puncture rubber gloves and portable equipment protective insulation.
- 6.6 Tools and other equipment used on company work should be subjected to inspection by the foreman at all times and should be inspected periodically. Defective tools or articles should be used until properly repaired or replaced.
- 6.7 Tools or materials should not be thrown or tossed from one employee to another. They should not be placed or permitted to remain on narrow pathways or on scaffolding or where it would create a stumbling hazard or be placed in a position where they may fall on someone.
- 6.8 Pointed tools should never be carried edge or point up in workman's pocket or shoulder. They should be carried in a tool box or in a pocket tool pouch, or in the hands with points and cutting edges away from the body and from any person following.
- 6.9 When working in an elevated position all tools and small materials should be raised and/or lowered in a canvas bucket or insulated container. This container should also be used for the storage of tools and materials while in the working position. Tools should be not be stored on cross-arms.
- 6.10 Tools should not be thrown from the ground to the working position or vice versa.
- 6.11 Keep all hand tools, whether your own or the company's in first class condition at all times. Tools should be kept free from grease and dirt.
- 6.12 Never use mushroomed or cracked heads, or tools with loose or broken handles. Either repair a bad tool at once or secure a replacement.
- 6.13 Chisels, hammers, wedges and other striking tools must be inspected at weekly intervals. No mushroomed or cracked tools are permitted, and they should be dressed by proper grinding.
- 6.14 When two or more persons are working close together in confined place (inside hulls, tanks, etc.), proper coordination of the movements is essential so as to prevent causing injuries to one another with tools being handled.

- 6.15 Brittle tools, such as files and rasps, must not be stacked with other metal tools. Files and other tools with pointed stems must not be used without corresponding handles.
- 6.16 Do not use excessive pressure or force on hand tools. If the tool requires too much exertion (such as adding a piece of pipe to a wrench), it is not the right tool for the job. Get one of correct size and design.
- 6.17 In most cases it is safer to pull on a hand tool rather than push on it.
- 6.18 Portable electrical tools must be in good operating condition and properly grounded. Handle the cord carefully to avoid damage.
- 6.19 Keep a handsaw sharp and in good condition, with teeth properly set and clean.
- 6.20 When using a handsaw, start the cut with two long pulls up, guiding with the thumb.
- 6.21 Use only screwdrivers in good condition, and that fit the screw. Never use for leverage or for prying things open.
- 6.22 The safest way to hold a cold chisel, whenever possible, is between thumb and forefinger, palm up. If the tool is gripped in the fist and a blow misses the chisel head, it may strike your knuckles and result in painful and disabling injuries.

22

CHAPTER 7 - SPECIAL EQUIPMENT SAFETY

Scaffolds and Ladders

- 7.1 Erected scaffolds should be inspected by the workman in-charge regularly to make sure they are maintained in safe condition.
- 7.2 Never use makeshift or improvised scaffolding. If scaffolding is required, make sure a safe one is erected.
- 7.3 Never use ladders or makeshift devices on top of scaffolding to increase its height.
- 7.4 Safety lines or ropes at least 5/8" in diameter securely anchored at the top should be provided for each man on a swinging scaffold.
- 7.5 Ladders should be examined before using and the side rails, spurs, shoes, rungs, etc., shall be in good condition. If found defective, they should be replaced.
- 7.6 Ladders must be placed at a safe working angle with the footing secured and whenever practicable, ladder shoes or spurs must be used to prevent the possibility of ladders slipping. Where surface is slippery or where other conditions subject the man on the ladder to any unusual hazard, another man shall otherwise be secured.
- 7.7 When using a ladder the workman should not reach so far to the side as to unbalance himself on the ladder.

23

7.8 Portable meal ladder or wooden ladders with metal side rail reinforcement and metal rungs should not be used in substitution or at other locations where there is danger of contact with energized parts.

7.9 Stepladders shall be equipped with a metal spreader or locking device of sufficient size and strength to securely hold the front and back section in open position.

7.10 Never use ladders in horizontal position as runways or as scaffolds.

7.11 Never position a ladder in front of a door that opens toward the ladder unless the door is locked or guarded.

7.12 Never place a ladder against pane or sash.

7.13 Always provide solid footing on soft ground to prevent the ladder from sinking.

7.14 Never lean a ladder against unsafe backing such as loose boxes or barrels.

7.15 Be sure that a stepladder is fully open and extended before you start to climb. Always face ladder and hold on with both hands which is kept free of tools or other matters whenever ascending or descending a ladder.

7.16 Do not use ladders during a strong wind except when emergency and then only when they are securely tied.

Heavy Equipment

7.17 Particular attention should be given to the handling of heavy weights, selection and adjustments of the slings and the type of hitches used. The person in charge should be familiar with safe loads for chains, cables and other lifting equipment. When moving heavy objects on inclines, employees should always have "follow-up" blocks in place that will prevent losing control of the objects being moved.

7.18 A regular program of inspection and maintenance to be performed only by qualified mechanics should be established for all heavy equipment.

7.19 The safe operation of heavy equipment should always involve the selection and training of operators and maintenance crew should be thorough and systematic.

7.20 A firm foundation is required under shovels and cranes and outriggers should be in place before loads are lifted.

CHAPTER 8 - CHEMICALS AND GASES

Handling of Chemicals

- 8.1 Bottles, cans and other containers of chemicals shall be clearly and properly labeled and a system should be maintained to ensure that a label is replaced before it becomes unreadable.
- 8.2 Inhalation of excessive amounts of solvent's vapor should be avoided. Use appropriate personal protective equipment.
- 8.3 Frequent washing with the use of large quantities of water is necessary after exposure to irritants.
- 8.4 Leaking containers should be remedied immediately by transferring the chemical to sound containers.
- 8.5 Spills should be cleaned up promptly by workers wearing protective equipment.
- 8.6 Chemicals should be handled in strict compliance with the rules given for their type as shown on the label.
- 8.7 Chemicals which might react together to produce dangerous fumes, fire or explosion shall be stored separately.

26

Laboratory Work

- 8.8 The laboratory's ventilation system must be properly maintained.
- 8.9 When work has to be done with explosively unstable substances, suitable shields should be designed which allow the necessary manipulation while providing protection for the worker.
- 8.10 Laboratories should be fully equipped with a complete range of personal protective equipment.
- 8.11 The importance of personal hygiene should be stressed and it should be pointed out that long hair, beards and moustaches increase the hazards of contamination.
- 8.12 Never open bottles or containers of highly volatile flammable chemicals, liquids or gases in a room where there are open flames unless special precautions for ventilation are taken and flames and burners are at a safe distance.
- 8.13 Never leave burners or fires of any kind going when not needed.
- 8.14 Maintain constant inspection of rubber tubing used on gas burners and prevent leaks of all kinds.
- 8.15 Know the location of and maintain emergency shower or eye wash fountain always in operating condition.

27

Combustible Gases

- 8.16 Equipment of handling and storing flammable gases should be constructed, inspected and maintained so that the danger of leakage and explosive mixture formation is reduced to a minimum.
- 8.17 Combustible gases may be stored in the open only if they are adequately protected from the weather and the direct sunlight. Storage areas should be located at a safe distance from occupied premises.
- 8.18 The premises of a depot should be adequately ventilated and a system of lighting which flameproof electrical switches should be installed.
- 8.19 Cylinders should be used for one gas only or properly cleaned before filling in with a different gas.
- 8.20 Cylinders of flammable gases shall never be stored in the same room as cylinders of oxygen.
- 8.21 To prevent the escape of gas, containers should be made from materials, which are not affected by high pressure and are not subject to corrosion.

CHAPTER 9 - MACHINE SHOP PRACTICES

Machine Shop

- 9.1 Do not wear gloves when working at the point of operation of any machine.
- 9.2 Power must be shut-off before placing work on or in the machine.
- 9.3 Welding works should be in shade or operating areas must be shielded to prevent glare to other workers around the shop.
- 9.4 Precautions should be taken against fires when cutting or welding near loose, flammable materials, air ducts, gas lines, acid tanks, electrical circuits, etc. See that proper extinguishers and fire watch is provided.
- 9.5 Never use oil gasoline compounds for washing hands and machinery's. Use proper cleansing agents.
- 9.6 When blowing out lines under pressure in order to clean them, make sure that you and other person will not be injured.
- 9.7 Do not reach over the machine to get materials worked on or finished work from the other side. Always walk around the machine to get materials from behind knives or saws.

9.8 Employees working about moving machinery or live equipment and circuits shall proceed with great care in performing their work considering carefully the effect of each act and doing nothing which might endanger themselves or others.

9.9 Never use compressed air for cleaning clothing or any part of your body. This practice is very dangerous, especially when carrying objects around the mouth, eyes, ears, etc.

9.10 When going downstairs, always use handrail, especially when carrying objects. Walk, do not run.

Machine Tools

9.11 Operation, adjustment and repair of any machine tool must be restricted to experienced and trained personnel or apprentices under close supervision.

9.12 Safe work procedures must be established, and short cuts and chance taking prohibited.

9.13 New equipment should be inspected and safety innovations made before allowing operator(s) to use the equipment.

9.14 Machine should never be left running unattended.

9.15 Manual adjusting and gauging (calipering) of work should not be permitted while the machine is running.

30

9.16 Operators should use brushes, vacuum equipment or special tooth for removing chips.

Gas Welding and Cutting

9.17 All persons engaged in the installation, maintenance and operation of apparatus and equipment shall be qualified by experience or instructed in safe methods before being permitted to engage in such operations.

9.18 All apparatus and equipment shall be completely inspected before being placed in service and weekly thereafter. Defective apparatus and equipment shall be removed from service, replaced or repaired and re-inspected before again being placed in service.

9.19 Cylinders shall be stored in definitely assigned places away from stairs, gangways or entrances to confined spaces. Assigned storage spaces shall be located where cylinders will not be knocked over or damaged by passing or falling object.

9.20 Cylinders containing oxygen shall be stored well away from cylinders containing combustible gases.

9.21 Cylinders permitted inside the building shall be stored in a well-protected, ventilated, dry location, well away from highly combustible material such as oil or excelsior and/or other sources of heat.

9.22 Valve protection caps shall always be in place, hand tight except when cylinders are in use or connected for use.

31

9.23 Oxygen shall not be used as a substitute for compressed air in pneumatic tools, in oil, preheating burners, to start internal combustion engines, to blow out pipelines, to "dust" clothing or work, or to create pressure, or for ventilation.

9.24 Fuel gas cylinder valves shall be opened only with tools specifically designed for that purpose. Oxygen cylinders, the valves of which cannot be opened by hand, shall be set aside and supplier notified.

9.25 Tampering with safety devices in cylinders or valves is prohibited.

9.26 A suitable track, chain or steadying device shall be used to keep cylinders from being knocked over while in use.

9.27 Fuel gas or oxygen cylinders will not be used without first attaching a regulator to the cylinder valve.

9.28 Cylinder valves not provided with fixed hand wheels shall have keys or handles on valves spindles or stems while cylinders are in service.

9.29 Operators shall be required to follow the procedure outlined by the manufacturer of the apparatus in use, in so far as they deal with the sequence of operations in lighting, adjusting and extinguishing blowpipe flames and connecting the apparatus to sources of gas supply. An acetylene cylinder valve shall not be opened more than $1\frac{1}{2}$ turns of the spindle.

9.30 Cylinders shall be kept in sufficient distance from the actual welding or cutting operations so that sparks, hot slag or flame will not reach them.

9.31 Cylinder valves shall be closed when work is finished or before moving cylinder.

9.32 Empty cylinders should be marked "MT" and segregated from full cylinders.

9.33 No one shall attempt to mix gases in a cylinder, refill a cylinder, or use it for other than intended by supplier.

9.34 Fuel gas cylinders found to have leaky valves or fittings which the closing of the valve will not stop shall be taken into the open away from any source of ignition and slowly drained of gas. Cylinders will be tagged and the owner notified.

9.35 Keep oxygen cylinders and fitting away from oil or grease. Cylinders, cylinder valves, couplings, regulators, hose and apparatus shall be kept free from oily hands or greasy substances and shall not be handled with oily hands or gloves. Oxygen cylinders shall never be handled on the same platform with oil or placed in a position where oil or grease is likely to fall upon them. A jet of oxygen should never be directed at oily surfaces, greasy clothes or into a fuel oil or other storage tank.

9.36 Hose connections shall be made through substantial fittings, and clamped or otherwise securely fastened so as to withstand, without leakage a pressure twice as great as the maximum pressure on the system.

Arc Welding and Cutting

- 9.37 Before starting operations, the operator should make certain that all electrical connections are securely made. The work connection should be attached firmly to the work. Work leads shall be as short as possible.
- 9.38 All equipment should regularly be checked to make certain that electrical connections and insulation on the holders and cable are in good order. Unsafe equipment should be reported to the proper supervisors, and use of such equipment discontinued until safe to operate.
- 9.39 Proper switching equipment for shutting down the welding machine shall be provided on or near the welding machine. A suitable motor starter of the hand or magnetic type shall be used.
- 9.40 A suitable means of control for varying the welding current over the specified welding range shall be provided. A suitable current indicating device, which shows the welding current corresponding to the setting of the generator control, shall be provided.
- 9.41 All parts of the motor and generator shall be bonded suitably enclosed and protected.
- 9.42 Neither terminal of the welding generator shall be bonded to the frame and protected.
- 9.43 All electrode holders shall be fully insulated, specifically designed for arc welding and of capacity to safely handle the maximum rated current required by the electrodes.
- 9.44 Electrodes shall be removed from the holder when not in use.
- 9.45 All welding cables shall be of the completely insulated type of proper size, etc., for the maximum current requirements of the work.
- 9.46 Only rubber-covered cable free from splices shall be permitted for a minimum distance of 10 feet from the electrode holder.
- 9.47 Lengths of cable shall be connected by substantial connectors of a capacity at least that of the cable.
- 9.48 Cable lugs shall be soldered to the cable and securely fastened to give full electrical contact. The exposed metal parts of the lugs shall be completely covered with rubber tape and protected with friction tape or equivalent protective covering.
- 9.49 All ground connections shall be mechanically strong and electrically adequate for the required current.
- 9.50 Proper electrical contact shall exist at all joints when a building structure or pipeline is used temporarily as ground return circuit.
- 9.51 Where a structure or pipeline is continuously employed as a ground return circuit, all joints shall be bonded and no condition of electrolysis or fire hazard permitted to exist.

9.52 Pipe lines containing gases or flammable liquids or conduits carrying electrical conductors will not be used for a ground return circuit.

9.53 Welding cables shall be kept dry where practicable and free from grease and oil.

9.54 A cable, which has become worn, exposing bare wires shall have that portion properly repaired or replaced.

9.55 When the operator has occasion to leave his work or stop work for any appreciable time, the power-supply switch in the equipment should be opened and the unit disconnected from the source of power.

9.56 Cable shall be substantially supported overhead. Special care shall be taken to see that welding supply cables are not in proximity to power supply cables or other high-tension wires.

Rule 1100 - Gas and Electric Welding and Cutting Operations

9.57 Gas and Electric Welding and Cutting Operations:

1100.01: General Provisions

1. Welding or cutting operations shall not be permitted in rooms or areas containing combustible materials or in proximity to explosives or flammable liquids, dust gases or vapors, until all fire and explosion hazards are eliminated.

36

2. Welding or cutting operations on containers filled with explosives or flammable substance is prohibited. Welding closed containers that have held explosive or flammable substance shall only be undertaken after the containers have been thoroughly cleaned and found completely free of combustible gases or vapors on the containers are filled with inert gas or with water.

3. Welding and cutting operations carried out or done in places where persons other than the welders work or pass shall be enclosed by means of suitable stationary or portable screens. Screens shall be opaque of sturdy construction to withstand rough usage of a material which will not readily be set on fire by sparks or hot metal, at least 2 m (6.5 ft) high, and preferably painted with light flat paint.

4. A portable fire extinguisher shall be provided at the place where welding and cutting operations are being undertaken.

5. Authorization before welding and cutting operations are allowed in large establishments, the area shall be inspected by the Safetyman. He shall issue a written permit or authorization for welding and cutting, indicating therein the precautions to be followed to avoid fire or accidents.

1100.02: Personal Protective Equipment

1. All workers or persons directly engaged in welding or cutting operations shall be provided with the following personal protective equipment:

37

- a) Goggles, helmets or head shields fitted with suitable filter lenses and hand shields, and
- b) Suitable aprons

- 2. All persons directly assisting in welding or cutting operations shall be provided with goggles, gloves or other protective clothing, as may be necessary.

1100.03: Welding or Cutting in Confined Spaces

The inhalation of any fumes, gases or dusts by persons welding or cutting in confined spaces shall be prevented by the provision of:

- 1. Local exhaust and general ventilation system to keep fumes, gases or dusts within allowable concentrations or threshold limit values.
- 2. Approved types of respiratory protective equipment.

CHAPTER 10 - PERSONAL PROTECTIVE EQUIPMENT

- 10.1 Correct type of personal protective equipment must be prescribed by the Department Head and Supervisor. Wearing such equipment should be enforced by the supervisor.

- 10.2 It is the responsibility of personnel provided with personal protective equipment to wear them at their place of work and take good care of them at all times.

- 10.3 It is the obligation of every employee to report damage to personal protective equipment, so that they can be repaired or replace immediately.

- 10.4 Make sure that you obtain a proper fit of the protective equipment issued to you (goggles, respirators, etc.) and that you understand how use and maintain it in serviceable condition.

- 10.5 Everyone should dress properly for the job.

- 10.6 Safety headwear is obligatory where there are overhead activities.

- 10.7 Respiratory must be used for specific jobs like handling toxic/hazardous chemicals, dust and fumes.

- 10.8 Protect your feet by wearing shoes in good condition and of a type suitable for the work you do. For instance, tennis or basketball shoes are not recommended for most jobs, while in other types of work, low shoes are not safe.

- 10.9 Goggles, face-shields or helmets should be provided for personnel exposed to eye injuries and this equipment shall be worn during the whole time in which the hazard exists.
- 10.10 Corrective spectacles or eyeglasses should never be used as substitute for safety goggles.
- 10.11 Employees should use shield, goggles or helmet and gloves whenever operating burning or welding outfits. Welders and helpers should wear gauntlet gloves.
- 10.12 Never watch welding work unless you are wearing the correct filter glass.
- 10.13 Personnel handling acids, and caustics and other chemicals shall wear face shield or special rubber gloves goggles and suitable gloves, apart from protective apparel that may be provided by the supervisor.
- 10.14 Safety belts are required for work in electrical places.
- 10.15 Ropes or lines used with safety belts must be kept short to prevent long drops of the person, and kept secured at supporting points at all time. Ropes used as life line should be in first class condition, and those showing frayed spot, damaged or which have been used around acids or caustics must be discarded from such service.
- 10.16 Gloves should be provided for occupations requiring hand protection, and they should be worn whenever necessary. Exception is made when around machine tools in operation.

40

CHAPTER 11 – BOILERS and PRESSURE VESSELS

BOILERS

- 11.1 A test and servicing program should be established whereby operating controls, safety controls and safety and relief valves would be tested and maintained at regular intervals.
- 11.2 Repairs should be made immediately upon indication of malfunction or leakage of operating controls, safety controls or safety and relief valves. Never operate with a malfunctioning safety or relief valve.
- 11.3 Enforce the keeping of a boiler log to ensure those necessary tests, maintenance and services performed and that records are available at all times.
- 11.4 Repairs and adjustments, such as tightening up flanged fittings, shall not be made on boilers and steam lines while under pressure.
- 11.5 Rules for both routine and emergency boiler operations should be posted permanently and legibly in the boiler room.
- 11.6 In addition to being well illuminated, the boiler should have a source of emergency lighting.
- 11.7 Repair of pressure parts of boiler or pressure vessel shall only be done after the plans and specifications of materials are approved by the Bureau, Regional Labor Office concerned.

41

11.8 The following precautions should be taken when maintaining Boilers:

- a. When it is necessary for employees to execute work inside of drums or other internal portions of boilers, they shall first secure release from boiler house foreman or engineer in charge. Such work must not be done by any employee of the plant without having first received specific instructions from either the chief engineer, his foreman or some other person designated to supervise the work.
- b. Before employees will be allowed to enter boiler for cleaning, inspecting or repairing, each of the boiler valves shall be securely closed and locked or sealed, "TAGGED" with the name of the foreman who called the apparatus out of service, and proper danger signs installed reading "DANGER MAN WORKING IN BOILER".
- c. On all water tube boilers when there is manhole on each of drum it is advisable that both manholes on each drum be removed before employees enter the boiler. On horizontal return tubular boilers, it is advisable that the manholes on the upper as well as the lower part be removed.
- d. When working in boilers, employees should assure themselves that electrical lighting equipment is adequate.
- e. No volatile inflammable shall be used for cleaning purposes. Oily waste or oil saturated clothing shall not be permitted inside any boiler drums except in cases where it is necessary to use welding or gas and cutting equipment.

42

Unfired Pressure Vessels

11.9 Servicing and maintenance of unfired pressure vessels are governed by the following:

- f. No boiler drum, combustion chamber, condenser shell or heater should be closed or sealed until it has been made absolutely certain that no one is inside.
- g. When slagging or cleaning boiler furnaces, it is recommended that men be equipped with goggles, suitable respirators or hose mask equipment and safety helmets.
- a. Pressure vessels should be inspected regularly by persons who qualified and trained for this work.
- b. Before being entered into a vessel must be properly drained, ventilated and cleared of flammable or toxic gas. All connecting pipelines should be disconnected and blanked or valves on the line should be closed, locked out and tagged.
- c. Men lowered into vessels should carry with them facilities to climb back out themselves.
- d. Compressed gas or air should never be used to test an unfired pressure vessel above its safe working pressure. Although it can be used to test for leaks at pressure below the working pressures.
- e. In conducting a hydrostatic test:
 1. Gauges should be checked to make sure they are in good working order and read accurately. Gauge connections should be checked to make sure they are clear.

43

2. It should be ascertained that all threaded connection are made suitable for the highest pressure to be encountered.
3. Any piping connected to the vessel under test should be suitable for the highest pressure to be encountered.
4. Vents should be provided at all high points of the vessel in its test position.
5. Operators should be instructed to open cover plates on removable doors only after the vessel has been relieved of all pressure.
6. Areas where high gas-pressure systems are operating should be restricted to all but necessary personnel.

CHAPTER 12 - WORKING IN CONFINED SPACES

- 12.1 An employee should only enter a chamber or other semi-enclosed area with the knowledge of his foreman or other responsible person. Danger tags shall be placed at the openings and such tag shall not be removed until the work has been completed and then only by the person who so placed it.
- 12.2 When men working inside boilers, air heaters, tanks, etc., a sign stating "DANGER - MEN INSIDE" should be placed outside the enclosure in a conspicuous spot. These signs may be removed only by the foreman or men assigned to do the work after they had made certain that the interior work is finished and the workers as well as tools and equipment are out of the enclosure. No piece of equipment should be sealed, shut or energized while it is blocked off with a "DANGER - MEN INSIDE" sign.
- 12.3 In case an electric welding equipment should be used in confined spaces, make sure before entering that the helper knows how to switch it off in case of emergency.
- 12.4 Never use oxygen from your torch to clean down a job to be welded particularly in a closed space.
- 12.5 Observe precautions on Pre-entry and occupancy:
 - a. When necessary clean the space to remove all residual contaminants such as solvents and organic materials where work in boilers and furnaces is to be done, allow adequate time for cooling.

- b. All valves and switches connected with the operation of the confined space must be closed and locked to prevent accidental introduction of contaminants, hot water, live steam or starting of equipment within the space when it is occupied.
- c. If possible, provide continuous ventilation during occupancy.
- d. Lifeline should constantly be held by a second standby worker who should continuously watch the worker in the confined space to permit rapid removal of the worker in an emergency.

CHAPTER 13 - OFFICE SAFETY

Office Behavior

- 13.1 Fighting, wrestling, practical jokes or any form of horseplay is prohibited inside the office, or in the plant compound.
- 13.2 Avoid placing of feet on the desk while leaning back on the chair, nor should you scoot across the floor with your chair.
- 13.3 Never report for work while intoxicated or under the influence of intoxicating substances.
- 13.4 When opening a door, stay out of the path of its swing. Another employee might be on the other side opening it too.
- 13.5 Under circumstances should employee unduly hurry when on hazardous work?
- 13.6 Never throw cigarette butts in trashcans, use ashtrays.
- 13.7 Floors and aisles in the work area must be kept free and unobstructed.
- 13.8 Keep lockers and cabinets clean, neat and orderly.
- 13.9 Never store oil-soaked rags, floor wax, paints, thinners and other flammable materials inside safety vaults.
- 13.10 Do not smoke inside elevators. •

Office Equipment

- 13.11 Telephone and electrical cables should not protrude over bar passageways. These and other obstructions such as low tables and office equipment should be protected by being placed against walls or partition, under desks or in corners.
- 13.12 Two or more file drawers should not be opened at the same time nor pulled out too far that may cause file cabinets to be unbalanced.
- 13.13 File drawers should not open into aisles unless extra space is provided for this. Particularly, file drawers should not open into narrow aisles. Pencil sharpeners and typewriter carriages must not jut out into the aisles.
- 13.14 Wastebaskets should be kept where people do not tripe over them.
- 13.15 Office furniture should be devoid of sharp corners and burrs. If it has, it should be corrected immediately.
- 13.16 Electric office machines should be carefully taken care of to prevent damage to machine, and grounded to prevent electric shock.
- 13.17 Never leave file drawers open. Other persons in the vicinity should be warned of an open file drawer to avert bumping against it.
- 13.18 Heavy objects should be kept off the top of file cabinets and other high furniture.

- 13.19 Thumbtacks and other sharp objects should not be thrown loosely into drawers. They should be kept in a box or other appropriate containers.

CHAPTER 14 - CONSTRUCTION SAFETY

Structure Demolition

The following are to be observed:

- 14.1 Only minor demolition work should be done by plant personnel.
- 14.2 Make provision to keep the public and unauthorized plant employees at least 15 ft. away from the structure.
- 14.3 Disconnect utility services (gas, steam and electricity) outside the building. Maintain waterlines as long as possible or install temporary water sources for fire protection and for wetting down the site to reduce dust.
- 14.4 Remove all glass doors and windows throughout the structure.
- 14.5 Strip of lath and plaster to eliminate excessive dust during succeeding operations.
- 14.6 Remove chimneys and extension of walls above the roof level while working from the roof.
- 14.7 Walls should be removed by picking them apart. Work from scaffolds supported independently of the walls.
- 14.8 Remove all debris promptly.
- 14.9 Avoid subjecting walls to lateral pressure from stored material or to lateral impact from falling material.

50

14.10 Barricade any area where material is being dumped and place screens where necessary to protect workmen from flying pieces.

14.11 Permit no employee to work below others.

14.12 Combustible structures should be surveyed to make sure that demolition would not affect their soundness and weather tightness.

14.13 Traffic control when necessary, should be set-up to facilitate the removal of rubbish.

14.14 Fire hoses should be made available. Access to the area and supply of water should be maintained for the fire department.

Excavation

On excavation works the following precautions should be observed:

14.15 Excavation along the public highway and other frequented places shall be properly protected by placing barriers, suitable guards, warning signs, red flags or danger signals so located as to be conspicuous to traffic.

14.16 When excavations are to be left unattended at night, not less than two danger lanterns should be used.

14.17 Barricades of materials having protruding nails should not be permitted.

51

14.18 All excavations should be carefully refilled until such time as permanent paving can be done. All refilling must be well tamped.

14.19 Ditching machines should be provided with suitable walkways, footboards and railings and proper safeguards over gears, chains and other moving parts. Employees should not be allowed to stand near digging buckets while machine is in operation.

14.20 Before any attempt is made to excavate, locations of underground pipes or electric lines should first be determined.

14.21 Material excavated by machine should be thrown at least 24 inches from the edge of the excavation but not aisles or work areas in the plant.

14.22 Excavated material should not be permitted to accumulate in a busy work area, but should be tacked or otherwise removed.

14.23 Pick and shovel men working in excavations should be kept far enough apart to prevent injury to one another.

14.24 Excavations should be barricaded to prevent employees or others from falling into them.

14.25 Dry drilling is not permitted underground to avoid serious health risk from silica dust.

52

Good Housekeeping at Construction Site

14.26 All discarded material must be removed from the job at once.

14.27 Combustible material yet to be used should be stored where it is safe from careless workmen or incendiary.

14.28 The job should be kept clean and the rubbish removed from the site daily.

14.29 A rubbish chute discharging from each floor into a transportable container should be provided to take care of small loose objects.

14.30 Throwing rubbish over the side or out window openings should be strictly prohibited.

Site Clearing

14.31 A space around the construction-site must be provided for delivery and storage of materials and offices and "shanties" for the men.

Woodwork

14.32 Except for the amount for immediate need, lumber is best stored outdoors.

14.33 If lumber must be handled manually to or from a higher pile, the pile should not be more than 16 ft. high and safe means of access to the top such as ladder should be provided.

53

- 14.34 Lumber stored outdoors should be covered to prevent checking or twisting. Lumber stored indoors should be in a well-ventilated building.
- 14.35 Cutting tools should be kept well sharpened and correctly balanced on their spindles and the whole machine should be placed on a vibration-damping base to minimize the amount of noise generated.
- 14.36 Operators should be given detailed instruction in the use of their machines and particular attention should be paid to the correct setting of guards and the use of pushsticks when machining small stock.
- 14.37 Whenever possible, sawdust and shavings should be taken off automatically from the machine, where automatic collector system is unavailable, waste should be swept up regularly to minimize the fire hazard.
- 14.38 When the work necessitates the use of a wide range of adhesives it should, if necessary, be carried out under exhaust ventilation.
- 14.39 Sanding appliances should be fitted with integral exhaust equipment or sanding be carried out under and exhaust hood.
- 14.40 All woodworking machinery should be effectively guarded to protect the operator and other employees from hazards inherent to their operation.
- 14.41 A power control device should be provided on each machine to make it possible for the operator to cut off the power to the machine without leaving his position at the point of operation.
- 14.42 Power and operating controls should be located within easy reach of the operator while he is at his regular work position, making it unnecessary for him to reach over the cutter to make adjustment.
- This does not apply to constant pressure controls used only for set-up purposes
- 14.43 Each operating treadle shall be protected against unexpected or accidental tripping.
- 14.44 When sawing small pieces, always use a notched pusher piece to push small pieces through the saw and not with your hand.
- 14.45 Be alert to the danger of a kickback of materials passing through the pony planner.
- Pipework**
- 14.46 Before work is done on a pipeline, the line must be shut off, valves locked and tagged, and the section of the line relieved of pressure and drained.
- 14.47 To prevent hands from slipping, maintenance men should carry a piece of waste or a rag in their pocket to wipe off excessive oil on pipes and fittings.

14.48 Gloves should be worn when handling pipes and fittings, especially when ends are threaded.

14.49 Pipes should be checked for burrs and these should be filed off immediately.

14.50 Pipes should be color-coded, especially those carrying potable water for drinking or for food preparation.

14.51 When a job involves a considerable amount of pipework, the materials should be moved to strategic points as the job progresses, to eliminate storage accumulation and reduce the amount handling.

Public Safety

14.52 Barricades, fences and guardrails should be set-up at appropriate warning signs should be posted.

14.53 Night lighting should be provided when necessary, especially in areas where open trenches or ducts create hazard in aisles and roadways.

14.54 If construction is about the sidewalk, blocking off the sidewalk with a fence must protect pedestrians.

14.55 When gates in the fence are open they should be guarded to warn pedestrian and vehicles when deliveries are being made.

Painting

14.56 No smoking and no open flames are permitted in the paint shed or in the spray room.

14.57 All paints, thinners and cleaning fluid must be stored in place provided and with the lids of container tightly covered and close.

14.58 Respirators must be worn during painting jobs and when in the open air, advantage should always be taken of the wind directions.

CHAPTER 15 - FIRE PREVENTION and CONTROL

Fire Prevention Practices

- 15.1 Fire hazard should be detected and eliminated through frequent and regular inspection.
- 15.2 Employee/s should eliminate or report to their immediate supervisor fire hazards, particularly in their work area, which may cause the loss of life or destruction of company property.
- 15.3 Fire fighting equipment should be checked regularly to be sure that it is ready for any emergency.
- 15.4 If a fire starts and you cannot put it out during the first few moments, do not lose valuable time trying to extinguish it without proper assistance facilities. A fire allowed to spread is difficult to control. Call the telephone operator, giving your name, indicating the exact location of the fire. Briefly, the correct procedure is as follows:
 - a. Give the alarm at once.
 - b. Try to put the fire out.
 - c. Get help - do not lose valuable time.
- 15.5 It is everyone's duty to know the location of fire control facilities, such as portable extinguisher, emergency and exit doors, etc. that have been made available in the vicinity.

58

- 15.6 Learn the mode of operation of fire extinguishers and proper application as to the fire of fire. This knowledge may be of extreme importance during an emergency condition.
- 15.7 It is absolutely prohibited to smoke or use open flames in restricted areas, which have been provided with "NO SMOKING" signs. These areas comprise storage's or highly combustible goods, explosives, flammable materials, etc.
- 15.8 Accumulation of all types of dust should be cleared at regular intervals particularly from bearings and other heated surface.
- 15.9 Aisles and doorways should be kept clear and should be wide enough to allow rapid use of hose reel carts or other mobile equipment.
- 15.10 When it becomes necessary to build a fire location where there is the possibility of its propagating beyond control, a portable fire extinguisher should be made available. The fire must be watched closely, and it must be extinguished if left unattended.
- 15.11 Do not discard cigarette butts or matches carelessly. Always use ashtrays or other suitable containers.
- 15.12 Do not obstruct fire exits. Exit doors must be well marked and must not be locked and routes to nearest exits (through doors, windows, ladders, etc.) must be easily accessible.

59

15.13 It is prohibited to obstruct or render in operative fire fighting equipment such as fire hydrants, extinguishers, hose racks, water sprinklers, etc.

15.14 It is prohibited to use fire hose from hydrant booths for purposes other than combating fire without proper authorization from the Safety Officer or the Environmental Management and Safety Department.

15.15 Oily waste rags, etc. are likely to ignite, spontaneously and they should be disposed of in metal cans with self-closing covers. They should be emptied daily.

15.16 All rubbish shall be cleared from buildings daily and work areas will be maintained free from accumulation of combustible debris.

15.17 Temporary high voltage wires shall not be run above storage piles or combustible materials.

15.18 Do not overload electric circuit by connecting several appliances at the same time.

15.19 Do not tamper with fuses, as increasing their rated capacity produces dangerous overheating of the fire system.

15.20 Flashlights and electric lanterns used in connection with handling of flammable materials shall be the type approved by the Underwriter's Laboratories, Inc.

15.21 Purging-Gas Freeing: No person shall be permitted to enter a storage tank, tank truck or other vessel has been properly purged and ventilated. After purging and venting, a test shall be made for gas. If the vessel is not gas free, purging and venting shall be repeated.

15.22 All persons entering storage tanks, tank trucks or other vessels, which have contained flammable liquids or gases shall be provided with necessary protective clothing, approved air fed masks, safety belts and lifelines. An attendant shall be stationed at the entrance to such tank or vessel.

15.23 No welding, cutting, riveting or other hot work and no mechanical repairs shall be performed on a storage tank, gasoline truck or other vessel which has contained flammables until such vessels has been properly purged and ventilated. After purging and venting a test for gas.

15.24 Welding, riveting or other hot work on tanks or containers that have contained flammable liquids of gases shall be performed only by men experienced in such work.

15.25 All tools used in explosive atmospheres shall be of non-sparking variety.

Flammable and Combustible Liquids

15.26 All storage, handling or use of flammables shall be under the supervision of qualified persons. No one shall be permitted to handle or use flammables until he has been instructed in the safe handling and use of it.

- 15.27 Do not handle or store flammable liquids in bottle open cans, etc. Approved safety containers with appropriate markings with hermetic sealing device must be used for this purpose.
- 15.28 Smoking and carrying of spark-producing device should not be permitted in an area where flammable liquids are stored, handled or used or where loading or unloading operations are performed.
- 15.29 If any flammable liquid is spilled it should be cleaned up immediately.
- 15.30 If flammable liquids are extensively used in considerable quantity heating arrangements should avoid the use of open gas burners.
- 15.31 Where necessary trays should be provided to retain accidentally spilled flammable liquid and to prevent it from flowing from a place of safety to a place it could become ignited.
- 15.32 Workers should be protected from the mist or spray as well as from contact with combustible liquids.
- 15.33 Control valves on equipment containing flammable liquids should be identified by color or tag or both.
- 15.34 Gasoline should be prohibited for all cleaning purposes.
- 15.35 Continuously operating equipment should be fueled from properly protected tanks located outside the machine room.

62

- 15.36 Prevent mixture of flammable liquids through proper identification.
- 15.37 Storage tanks and systems should be electrically bonded and grounded in an approved manner.
- 15.38 All storage tanks shall be equipped with proper relief vents.
- 15.39 All storage tanks above ground shall be diked, curbed or other suitable means provided to prevent the spread of liquids to other property in case of rupture in tank or piping. Such diked or curbed area shall have a capacity equal in volume to that of the tank.
- 15.40 Outlets from storage tanks above ground shall be equipped with quick-closing valves.
- 15.41 All gasoline trucks shall be properly bonded and grounded while being loaded or unloaded. Bonding and grounding connections shall be made before dome covers are removed on trucks and shall not be disconnected until such covers have been replaced. Internal vapor pressure shall be relieved before dome covers are opened.
- 15.42 Accumulation of flammable materials on floors, walls, etc. shall not be permitted.
- 15.43 Bungs, caps or stoppers shall not be left out of drums, barrels or other flammable liquid containers. This rule also applies to empty containers.

63

15.44 All tanks, hoses and containers shall be kept in metallic contact (Bonded) while flammable liquids are being poured.

15.45 Approved type fire extinguishers shall be provided at all locations where flammable are stored, processed or used.

Portable and Manual Fire Control Equipment

15.46 Portable fire extinguishers shall be conspicuously located and mounted where they will be readily accessible. Extinguishers shall not be obstructed or obscured from view at any time.

15.47 The extinguishers must be located close to the likely hazards, but not so close that it would be damaged or cut-off by the fire.

15.48 Portable fire extinguishers suitable to the conditions and hazards involve shall be provided and maintained in an effective operating condition.

15.49 Portable fire extinguishers shall be given maintenance service at least once a month with a durable tag securely attached to show the maintenance or recharged date.

15.50 Fire alarm system and other fire fighting equipment should be regularly checked.

15.51 All workers and employees should endeavor to learn how to operate and use a fire extinguisher effectively and should also know their location.

are of Fire Hose

5.52 Hose lines should be made available for immediate use, should not be obstructed nor made inaccessible.

5.53 Hose should be so arranged that it would not kink or tangle when pulled out.

5.54 Fire hoses should be reserved for fighting fires.

5.55 Hose lines should be inspected and tested regularly including its accessories like valves, nozzles and couplings. Any defect noticed thereon should be corrected immediately.

CHAPTER 16 - VEHICLE and LAND TRAFFIC SAFETY

- 16.1 No employee shall operate a company motor vehicle unless he is duly authorized.
- 16.2 Driving personnel shall familiarize them with and obey motor vehicle laws as well as standard road signs.
- 16.3 Unauthorized passengers shall not be permitted to ride on company vehicles.
- 16.4 It shall be the duty and responsibility of driving personnel to conduct inspection to the vehicle assigned to him, and to make the necessary job request for the repair of defects noted.
- 16.5 Drivers shall observe authorized passenger seating capacity as indicated on the vehicle registration certificate.
- 16.6 Driver shall not permit anyone to ride on the running boards, fenders and tailboards of vehicles.
- 16.7 No passenger shall get on or off a company vehicle while it is in motion.
- 16.8 Passenger shall board and alight from the vehicle in the curbside.
- 16.9 Fire trucks, police and ambulances shall be given the right of way all the time.

66

- 16.10 Drivers shall not leave the seat of the vehicle while the motor is running unless he shifts to neutral and sets the hand-break.

Safe Driving

In addition to the provisions, rules and regulations of the Bureau of Land Transportation and the Traffic Code, every employee who is authorized to drive company vehicles are required to observe the following safe driving practices:

- 16.11 Driving personnel shall practice the defensive driving techniques at all times.
- 16.12 Reckless driving shall not be tolerated. Cars and trucks must observe the speed limits.
- 16.13 All railroads must be approached with caution. Always expect trains to move at any time, on any tract in either direction. At railroad crossing, look in both directions as you approach to be sure that it is safe to make the crossing. Unless you have a clear view in each direction, reduce your speed so that you can easily stop before reaching the crossing if necessary.
- 16.14 When visibility is poor, the front and rear lights of all vehicles in motion shall be turned on.
- 16.15 Drivers often fail to see pedestrians crossing from the right immediately ahead of the truck, hence, the requirement to blow the horn twice before starting forward.

67

16.16 Where a number of men are working in various type of equipment are used, the driver should call upon another employee to signal whether or not the path is clear before backing or making any other movement.

16.17 Do not run any electrical cable or run into any low hanging wire.

16.18 Driver's attention should not wander, either through constant conversation or sightseeing. Driver must use cautions and common sense under all conditions.

16.19 Do not pass other vehicles going in the same direction in the brow of a hill, on a curve or in the face of an approaching car.

16.20 Be on alert for signal from other driver, police, traffic signs, etc.

16.21 Vehicular road crossings and pedestrian passageways must not be unnecessarily blocked by vehicle. Cars must not be switched over such crossings unless with utmost safety. Cars must not be left standing on vehicular crossings or bridges.

Parking Area and Garage

16.22 Comply strictly with parking rules. When parking downhill, be sure to turn front wheels to the right toward curb or side of the road, and leave vehicle in reserve gear. When parking uphill, be sure to turn front wheels to the left, rear part of front tire toward curb, and leave vehicle in low gear. If without curb, turn front wheels toward right or side of road, and leave vehicle in low gear when headed uphill.

68

16.23 Make sure parking does not encroach on fire hydrant zones, clearance spaces for island, pedestrian lanes and intersections.

16.24 Vehicles left standing on any grade or inclined track must be properly secured or blocked.

16.25 Motor vehicles should not be parked against the flow of traffic.

16.26 Stop before entering or leaving garage, then drive slowly with caution.

16.27 A break test shall be made before leaving garage or within the first block after leaving garage. If brakes are not functioning properly, return vehicle to the garage for the immediate attention. Any other condition found to be faulty should be handled in the same manner.

16.28 Thoroughly familiarize yourself with the controls of a vehicle before attempting to operate it.

16.29 Avoid running motor idle in closed garage unless a pipe or hose connection is provided from the exhaust to the open air to a suitable exhaust system to carry off carbon monoxide gas.

16.30 Upon returning a vehicle to the garage, any condition requiring attention shall be reported.

16.31 Smoking and the use of unnecessary open flames in garage or while working on vehicles are prohibited. Use only properly guarded extension lights or flashlights.

69

Loading and Unloading of Trucks

- 16.32 Overloading should not be allowed. Load should be properly distributed, secured in place and not piled over the allowable height to maintain stability.
- 16.33 Loads, which may shift, should be blocked or lashed. The downs (ropes, chains) should be tightened on the right side or top of the load.
- 16.34 Before loading or unloading a truck, the brakes must be securely set or the wheels blocked.
- 16.35 Any load projection beyond bodyline should be properly secured before transport and should be provided with red flags.

Reporting Traffic Accidents Involving Company Vehicles

- 16.36 A driver who is involved in an accident shall immediately report to his supervisor what has actually happened, the extent and causes of the accident. Adhere strictly to the requirements of the accident form, which every vehicle must carry at all time.
- 16.37 Even in cases involving bare contact between vehicle, it is important that a policeman's shield number and as many witness as possible be secured as damage claims are often made on the basis of shock to passengers. Cases not involving any apparent personal injury or property damage must be reported just as accurately as a serious accident.