

MABSEED ENGINEERING SERVICES LIMITED

POLICY

SAFTEY AND SECURITY POLICY AND PROCESSES

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STATEMENT OF SAFETY POLICY

The prevention of accidents on all work sites and in office facilities that result in injury or illness to employee, interruption or operation or damage to equipment or property is of great importance to the company.

All reasonable and practicable action will be taken to establish, monitor and maintain safe and health working conditions in a facilities in accordance with all statutory and clients requirements. All company facilities will have a defined safety plan. The plans will be constantly evaluated to ensure continuous improvement in safety performance.

Therefore the management **MABSEED NIGERIA ENGINEERING SERVICES LIMITED** is committed to execute its operations in such a manner as to achieve and sustain a high standard of protection of life and property through the following measures:

- Ensure compliance with policy for safety and healthy on its work sites and office facilities.
- Ensure that the requirements specified in this policy are effectively implemented.
- Investigate all accidents to establish all factors responsible in order to eliminate them as a matter of urgency.
- Secure the cooperation and dedication of all employee to achieve an effective safety programme.
- Ensure that safety considerations are built into the bidding, planning and costing stages of the proposal and project conception.
- Ensure that safety performance is not sacrificed to meet production target.
- Promote and undertake safety training programmes for employees.
- Cooperate fully with client's personnel to achieve high safety performance in their work locations.

It is equally the duty of every employee to contribute to this safety policy, to exercise personal responsibility and to do everything possible to prevent injury to himself, others and property.

Managing Director

DATE:

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SECTION 1

ORGANIZATION

1.1 SAFETY OBJECTIVES

Mabseed Nigeria Engineering Services Limited's objectives are to:

- Have a safe operation during our working traveling and domestic life.
- Protect our physical environment.
- Reduce the incidence of lost time injuries to the barest minimum.
- Increase safety awareness of the company.
- Improve welfare support facilities at work locations and in the office.
- Increase the level of awareness of all potential hazards within working arrears.
- Carry out safety audits, accident and near-miss investigations in order to ensure that work practices are recorded and improved where necessary.
- Provide up-to-date safety publications that will include manuals, posters etc., to work locations and offices.
- Ensure that safety is an item on the Agenda for our monthly meetings.
- Carry out safety training for company personnel.
- Ensure the use of appropriate personal protective equipment and the right tools for the job at all times.
- Develop safety contingency plans for all contract jobs during protect/contract execution.
- Ensure the provision of adequate First Aid Boxes and to train all staff in First Aid procedures in the work place.
- Provide proper supervision for the work-force.

1.2 BASIC SAFETY RULES

- a. Employees shall read, be familiar with and be guided by the contents of this safety manual.
- b. Employees shall follow Company's written and Oral instruction and procedures for safety while performing their jobs.
- c. Employees shall correct and/or report orally or by written memorandum to their supervisors any unsafe condition of act observed.
- d. Employees shall immediately report all accidents to their supervisors. It is important to report all injuries regardless of the severity so that causes may be determined and preventive measures formulated.
- e. The use of alcohol or illegal drugs while at work is strongly prohibited.
- f. Safety 'induction' training shall be held for all new employees.
- g. Damaged and unserviceable equipment must be promptly removed from site.
- h. All hot work must be authorized and supervised during execution to eliminate errors and lapses.
- i. No employee shall attempt a job he is not familiar with until properly instructed by his supervisor.

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- j. Never distract another employee's attention from his work to avoid injury to him.
- k. Never operate any machine or any piece of equipment unless you have been assigned to do so by your supervisor.
- l. Never operate your equipment unless all guards are in place. Report any misplaced guards or defective controls to your supervisor immediately.
- m. Never use defective tools. Exchange defective tools or have them repaired.
- n. Never stand or walk under a suspended load.
- o. All employees must obey safety-warning signs.
- p. Smoking shall not be permitted, only in authorized office.
- q. Smoking shall not be permitted in any area where fire hazards exists.
- r. All personnel shall participate in regular fire drills and other emergency procedures.
- s. Personal protective equipment issued to employees must be worn at all times.
- t. Loose or ragged clothing shall be worn at work locations.
- u. Personnel shall keep the working area clean and orderly. Tools shall not be left lying on the floor or other walking surfaces where they present hazards.

1.3 SAFETY RESPONSIBILITIES

- * Mabseed Nigeria Engineering Services Limited will maintain compliance with the policy for safety and health on its project and office facilities.
- * Ensure the effective implementation of the requirements specified in this policy.
- * Institute a Workers Compensation Insurance Policy.
- * Liaise with government agencies on matters relating to safety and health.

SAFETY OFFICER

The safety officer is the **KEY TO AN ACCIDENT PREVENTION PROGRAMME**

The responsibilities of the safety officer shall include the following:

1. Facilities programme implementation.
2. Co-ordinate the development of safety procedures.
3. Monitor compliance with client and statutory rules and regulations.
4. Monitor the implementation of the company safety training programme.
5. Keep track of employee compliance with company rules and the highway code.
6. Maintain credible data/statistics on all safety related matters.
7. Provide guidelines for safety consideration in purchasing of materials, tools and equipment.

ADMINISTRATION

The Administration Manager has the following responsibilities:

1. Co-ordinate all office safety initiatives.
2. Provide administrative support in development of strategies for effective safety management.

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3. Organize and schedule office safety drills and emergency preparedness.
4. Monitor first-aid administration.

PROJECT SUPERVISOR

1. Organize safety training on site for his project team.
2. Monitor and enforce compliance with safety rules and regulation.
3. Monitor housekeeping always.
4. Inspect work methods and equipment.
5. Document unsafe practices and conditions with a view to taking corrective action.
6. Investigate and report accidents in accordance with the accident notification.

SAFETY COMMITTEE

This shall be made up of the following staff positions as follows:

Managing Director	:	Chairman
Project Supervisor/Manager	:	Vice Chairman
Safety Officer	:	Secretary
Administrative	:	Member

ACTIVITIES

- * Meet regularly to deliberate on the programme and review overall performance.
- * Review feed-back from down the line.
- * Review any incidents or accidents previously reported.

SAFETY MEETINGS

The duration of safety meetings shall not exceed 30-60 minutes to ensure fruitful conditions and avoid unnecessary time wasting.

Members shall attend and participate by presenting their ideas regarding safe practice and procedures and by notifying the committee of any knowledge of hazardous conditions or actions in operations.

1.4 SAFETY TRAINING PROGRAMME

Appropriate and adequate training to promote HSES education and awareness shall be organized for all personnel at all levels.

The training may take any of the following forms:

1.4.1 GENERAL SAFETY COURSES

Attendance at training programme by staff shall be given due consideration.
Sponsorship to relevant seminars/workshops shall be given top priority.

1.4.2 BASIC FIRE TRAINING

It is compulsory for all staff to attend this course. This is because fire constitutes hazards to personnel and property. The Safety Officer shall carry out regular safety briefings.

1.4.3 FIRST AID COURSE

All courses organized by the Red Cross Society and other organizations shall be patronized.
Field Staff are particularly required to be properly trained on first aid courses.

1.4.4 SWIMMING TRAINING

This shall be placed on the “need basis” list.

1.4.5 GOOD HOUSEKEEPING

1.4.6 ELECTRICAL SAFETY

1.4.7 PERSONAL PROTECTIVE EQUIPMENT

1.4.8 MATERIALS HANDLING

1.5 SAFETY MEETING PROGRAMME

In compliance with the stated objective of management to prevent injuries and damages to equipment and property through sustained dedication to safety, monthly safety meeting will hold on first Tuesday of every month.

Since Safety compliance is a performance indicator in each employees evaluation, it is therefore mandatory that all staff attend these meetings.

The following is a preliminary schedule and topics which will be discussed each month.

MONTH	TOPIC
January	Personal Protection
February	Office & Electrical Safety
March	Preventing Slips
April	Positive Safety Attitudes
May	Manual Lifting
June	Fire Hazards and Fire Prevention
July	Defensive Driving Tips
August	Stress and Pains
September	Emergency Preparedness
October	Permit to work
November	Good Housekeeping
December	Benefits of safety in the workplace

During the meeting which should not exceed 60 minutes, fruitful discussions on progress so far on specific issues or changes should be held. In addition, areas of doubt in the policy and regulations should be given attention during these meetings.

Members shall attend and participate by presenting their ideas regarding safety practices and procedures and by notifying the house of any knowledge of hazardous conditions or actions in operations.

1.6 SAFETY AWARENESS PROGRAMME

In order to foster safety awareness among employees, activities and strategies shall be adopted to constantly remind employees of their responsibilities in ensuring sound safety practices in all work locations.

The schedule of safety awareness programme shall include the following:

- Monthly fire drills and evacuation procedure.
- Safety Awards to deserving employees.
- Annual Safety Weeks to create awareness.
- Safety notices on bulletin boards, publication of accident of investigation reports.
- Publication of Company’s annual safety performance statistics.
- Enforcement of permit to work system.
- Enforcement of use of personal protective equipment.

- Circulation of safety literature to staff.
- Implementation of safety audits.

1.7 **EMPLOYEE ORIENTATION PROGRAMME**

All new employees shall undergo orientation programme on all aspects of company activities and the safety responsibilities required of them. This measure is meant to ensure safe practices in all our workplaces, especially work sites.

The following is a schedule of topics, which will be covered during the orientation.

- Brief introduction to company activities
- Accidents and how to prevent them
- Company Safety Rules
- Fire and Fire fighting appliances
- Operational safety procedures
- Permit to work
- Accident Reporting
- Benefits of Safety to work
- Mobil Producing Nigeria Unlimited Safety Requirements.

1.8 **ACCIDENT REPORTING PROCEDURE**

1.8.1 **INJURY CLASSIFICATION**

The following classification of injuries is recognized in our operations:

- i. Fatal
- ii. Major
- iii. Minor

All three shall be recorded, but minor injuries will be featured in our annual statistics.

However, all incidents resulting in injury to personnel and/or property damage shall be fully investigated to determine the remote and immediate causative factors. Findings of such investigation will be given the widest publicity on bulletin boards to disseminate lessons learnt for the benefit of all employees.

1.8.2 **DEFINITIONS**

FINAL INJURIES

All injuries leading to death, which occur in the course of regular employment with company. Such incidents shall be recorded and reported to our client's supervisor and in writing within 24 hours to appropriate government agencies as required by labour laws of the Federation of Nigeria.

MAJOR INJURIES

All injuries, which can keep the employee out of his/her normal work routine for two days or more following the incident/accident. All such injuries shall be recorded and reported to the client's supervisor and the appropriate agencies of government.

MINOR INJURIES

Injuries serious enough to attract first aid treatment but not enough to keep the employee off his/her normal routine of work for up to one day.

1.8.3 REPORTING

All accidents will be reported on an Accident Notification Investigation and Reporting forms shall be completed by the person in charge of the work at the time of the occurrence. All investigations shall be jointly carried out by this personnel and the Safety Officer. Presentation shall be made for

The safety committee. Thereafter, the accident shall be reviewed by the committee. This is to ensure that lessons learnt are given company wide circulation. Accident investigations should not be used as a means of apportioning blame to avoid fear culture which may lead to reoccurrence.

1.8.4 ACCIDENT INVESTIGATION REPORT FORM

This form shall be used to notify the safety officer within 24 hours of an occurrence. (See Appendix III).

1.9 WORKSITE SAFETY INSPECTION PROGRAMME

It is important to ensure the safety personnel and property on work sites by carrying out both formal and informal safety inspections:

The safety inspection should cover the following areas:

- Equipment must be physically checked to detect unsafe conditions.
- Adequate placement of “NO SMOKING” and other fire safety signs warnings in conspicuous locations.
- The use of personal protective equipment by employees on site.
- Observation of safety rules & regulations by workers on site.

The safety officer should look for the following features in the under listed equipment to ensure accident prevention at work sites.

- (a) **Personal Protection Equipment**
 - Conscientiously worn
 - Easily available
 - Correct type
 - Well maintained
- (b) **Fork-lift trucks (if any)**
 - Property maintained
 - Pallets sound
 - Warning signs visible
- (c) **Ladders**
 - Maintenance carried out regularly
 - Available easily
 - All in use inspected
 - Operatives know rules for ladder-work
- (d) **Machinery Guarding**
 - Adequate
 - Well maintained
 - Used all the time
 - Warning plates visible and readable
- (e) **Electrics**

- Tidy wiring
- Circuits can be isolated
- Provision for locking of
- Condition of earthing devices
- Regular tests and inspections
- Broken sockets and switches replaced
- Rules displaced

(f) **Fire Protection**

- Alarm Systems Working
- Portable fire extinguishers adequate and services
- Location of instructions
- Escape routes
- Clear
- Well Known
- Observed
- Regular inspection of equipment and fire notice
- Storage of flammables

(g) **Lighting**

- Adequate
- Clean Fittings
- Suitable for work
- Accessible for lamp changing

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(h) Housekeeping

- Floors-tidy, clean and well maintained
- Stairways-good condition of threads, handrails, clean and unobstructed
- Waste disposal
- Storage and piling of materials

(i) Tools

- Power tools, wiring
- Hand tools
- Storage of tools

(j) Working environment

- Lighting
- Ventilation
- Noise

(k) Unsafe Practices

- Excessive speed
- Improper lifting
- Removing guards
- Working on unguarded machinery

- (l) Flammables
 - Kept in an isolated area
 - Properly stored
 - Visible and adequate warning signs

- (m) Fire Hazards
 - Ignition sources
 - Potential of fire spread

- (n) Explosion Hazards
 - Pressure Vessels
 - Confined Spaces
 - Check for leakages

- (o) Permit to work system
 - Used where necessary
 - Enforced
 - Procedures observed

SECTION II

SAFETY OPERATING PROCEDURES

2.1 STORES

All items in store must be labeled correctly. Similar items should be stored together, store aisles must not be obstructed to allow for unhindered access. Dangerous items must be stored in approved areas. Unauthorized entry must be controlled. Lower shelves should be used for storage of heavier items whilst the upper shelves should be used for the lighter ones. Adequate lighting should be provided and properly ventilated to allow free flow of air. Stored items must be adequately shielded from weather effects. All stores must be kept clean and free of spills at all times.

2.2 MATERIAL HANDLING

Improper handling of materials and heavy objects cause many injuries accidents in the work place. Employees' back can be seriously injured from improper handling.

Mechanical means of handling materials should be used whenever possible, instead of manual means.

CRANES

Cranes come in for wide of application in the industry especially in material handling and storage; and there various types also like overhead and gantry cranes, crawler, derricks e.t.c.

- i. A modified crane must be checked thoroughly for its newly rated load by an approved and competent person.
- ii. The equipment, its controls and other safety device such as load indicators and audible warning signals must be maintained in good working condition.
- iii. Safe Working Load (SWL) should be clearly marked on the crane.
- iv. Every crane is required by law to be thoroughly examined at least once in every period of 14 months and proper records kept.
- v. "NO ROLLER" sign shall be posted on all mobile equipment.

The following strategies shall be adopted to minimize injuries from materials handling.

LIFTING AND PLACING

Before you start, inspect the object to be lifted for sharp edges, splinters, nails. Or anything else that might cause injury.

- i. Size up to the load. If it appears too heavy, get help fast.
- ii. Stand close to the base of item you are lifting.
- iii. Keep your back straight.
- iv. Tuck in your chin.
- v. Stand with your feet slightly apart with the right foot forward and firmly planted.
- vi. Bend your knees, not your waist.
- vii. Grasp the load firmly and close to your body.

- viii. Lock your elbows and lift.
- ix. Rise slowly.
- x. When sharing a load with a colleague make sure you can see each other clearly and that communication is understood at all times.
- xi. Place dunnage under each load to provide finger clearance.
- xii. Place load on a floor or table, by first putting the farthest edge of the load on the floor or table. Remove hands from under the load and push into place.

WORKING AT HEIGHT

- i. You must be conscious of both your own safety and that of others below.
- ii. You must put on your safety belt for any work above 2 metres on structures.
- iii. Make sure your safety belt is securely anchored before commencement of work.
- iv. The areas below must be barricaded off and signs provided on site, warning of overhead work.

2.3 TRANSPORTATION

During transportation, involving movement of personnel, equipment or material, the following rules and regulations shall apply:

2.3.1 ROAD TRANSPORTATION

All vehicles must have valid statutory papers before they can be used in any operation.

These papers shall include:

- Vehicle License
- Insurance Certificate
- Road Worthiness Certificate

Drivers must hold on authorized driver's license. Drivers and front seat passengers must fasten seat belts while the vehicle is in motion. Drivers of all vehicles are responsible for the passengers and equipment they are handling.

The following checks shall be carried out daily:

- Tyre pressures
- Water level in the radiator
- Oil level in the engine
- Trafficator lights
- Head lights and brake lights
- Horns
- Wipers
- Steering (for free movement)

In addition, all vehicles shall be equipped with the following:

- Spare tyre
- Fire extinguisher
- Jack and Wheel Spanner
- Caution Sign

Drivers' must stop at all crossroads and follow the instruction of law enforcement agents. Overloading and speeding is not permitted. All company drivers must drive with the following speed limits.

- | | | |
|------|--|----------|
| i. | Maximum speed (highways) | -100km/h |
| ii. | Maximum speed (highways during night or wet condition) | -80km/h |
| iii. | Maximum speed (normal roads) | -50km/h |
| iv. | Maximum speed (site premises) | -30km/h |

All accidents involving company vehicles must be reported to the senior personnel in charge. The investigation of such accidents shall follow the same procedures as work related occurrences.

SAFETY OF LOADS ON VEHICLES

The weight distribution, packing and adjustment of the load of a vehicle or trailer shall at all times be such that no danger is caused or is likely to be caused to any person in or on the vehicle or road.

The following should be observed for the safety of all road users and load;

- In carrying any load keep within legal axel load requirements.
- The load should be spread to keep the center of gravity as low as possible. Where the load is stacked, larger and heavier items should be placed at the bottom.
- If possible the vehicle should be loaded to give an even weight distribution over its floor area.
- In order to maintain lateral stability, the center of gravity of the load should be on the center line of the vehicle or as near as possible to it.
- It is better for heavier items to be carried on the centerline of the vehicle than at the sides.
- Heavy, when possible solid items should be placed in front of light, crushable ones.

SAFE LOADING

Your life and the lives of others depend upon the security of your load.

DO'S

1. Do make sure your vehicle's load space and the condition of its load platform are suitable for the type and size of the load.
2. Do make use of load anchorage points.
3. Do make sure you have enough lashings and that they are in good condition and strong enough to secure your load.
4. Do tighten up lashings or other restraining devices.
5. Do make sure that the front of the load is abutted against the headboard or other fixed restraint.
6. Do use wedges, scotches, etc so that your load cannot move.

DON'TS

1. Don't overload your vehicle or its individual axles.
2. Don't load your vehicle too high.
3. Don't use rope hooks to restrain heavy loads.
4. Don't forget that the nature, size and position of your load will affect the handling of your vehicle.

2.3.2 WATER TRANSPORTATION

All water transportation instructions shall be adhered to as given by the quartermaster of the watercraft.

Passengers on marine vehicles must obey the following:

- Remain seated in the cabin unless instructed to the contrary.
- Wear life jacket as instructed.
- Embark only when asked to do so.
- Do not distract quartermaster and crew.

2.3.3 AIR TRANSPORTATION (HELICOPTER)

Passengers should follow the lead of the pilot before boarding the aircraft. After boarding, the following rules shall apply.

- Fasten your seat belts.
- Strap your life jacket pouch around waist.
- Wear your earmuffs.
- Obey all instructions from pilot and crew.
- Remain in your seat until told to disembark.
- Do not approach the aircraft unless told to do so.
- Never walk round the back of the aircraft the rotor is very dangerous.
- Attend safety briefing before boarding the aircraft.

SECTION III

GENERAL SAFETY

3.1 PERSONAL PROTECTIVE EQUIPMENT (PPE)

3.1.1 General

Personal protective equipments constitute pieces of equipment and apparels used or worn by a worker to protect him/her against the hazards present in the work environment.

Whenever a hazard is identified in the work place, every effort must be taken to eliminate it. Changes of process or materials should be considered.

Personal protection equipment only becomes necessary when all other efforts at eliminating the hazard have proven abortive. It should be noted that PPE does not prevent the accident or remove the hazard. They can only minimize the effects of the hazards on the worker or reduce the extent of the injury, which may result from an accident.

A worker should therefore not make the mistake of deliberately exposing himself/herself to risks just because he/she is putting on PPEs.

Personal protective equipment must be worn at all times in work areas where hazards cannot be eliminated, failure to do so is a violation of safety rules and would attract appropriate disciplinary action.

3.1.2 Awareness

Employees must be thoroughly educated on the need to and importance of personal protective equipment. They should be made to understand that this is a mandatory requirement that they must comply with.

3.1.3 Procurement of PPEs

The right types and styles of PPEs available in the market should be purchased for use by workers. Care should be exercised to ensure that any PPEs specified will provide the needed protection for each hazard.

3.1.4 Issuance of PPEs

Management procedures and instruction shall be used for issuing the needed PPEs to workers. Records shall be kept of all PPEs issued to personnel, indicating date of issuance and size. Items issued out must be signed for and those that are no longer fit for use should be returned to the Safety Officer for proper disposal.

3.1.5 Types of PPEs

Overalls/Aprons: Protect the body from contact with hot, corrosive or hazardous substances.

Foot Protection: Comprise safety boots shoes, job masters, swamps shoes, rain boots etc.

Eye goggles: These protect the eyes from splashes of corrosive liquids, flying particles, dust and dangerous radiation.

Hand gloves:	These protect the hands, palms and fingers from burns, cuts, bruises and scratches.
Respiratory equipment:	These protect against irritating dust, toxic or corrosive fumes or inert gases.
Face shield:	This is meant to protect the face and neck against light impact, dangerous chemicals, flying particles, heat, hot splashes radiation and other hazards.
Ear muffs/plugs:	Ear protection in all noise problems areas.
Ear and harnesses:	These are used when working at an elevated position.
Fire suit:	For going through fire.
Life jacket:	This should be worn by all persons engaged in water-borne operations.

3.2 **GOOD HOUSE KEEPING**

3.2.1 Definition

Good house keeping is defined as an orderly arrangement of operations, tools, equipments, storage facilities and supplies. In addition to cleanness, it means a place for everything and everything in its place. It should be seen as the starting point for a credible safety programme which has the advantages of improved productivity, low accident rates and improved employee morale.

3.2.2 **GOOD HOUSE KEEPING PRACTICES**

1. Keep the working area clean and orderly.
2. Tools should not be left lying on the floor or the walking surface where they present hazards. All tools and equipment should be returned to their correct storage location.
3. All floors, gangways, passages and staircases should be kept free from all liquids and obstructions.
4. Oil spills and slippery areas should be immediately cleaned.
5. Personnel should not walk or climb on piping, valves, fittings or any other equipment not designed as walking surfaces.
6. Waste materials must be placed in proper disposal place.
7. Ensure all liquids are stored in approved containers and are used only when necessary.
8. Employees should be encouraged to report conditions that contribute to disorder.

3.3 **FIRE PROTECTION**

3.3.1 **PRIMARY HAZARDS**

Fire or explosion will occur when the following three factors are combined or are brought together.

- | | | | |
|------|----------------------|---|------|
| i. | A source of ignition | - | HEAT |
| ii. | Oxygen | - | AIR |
| iii. | Combustible material | - | FUEL |

3.3.2 **EXTINGUISHING FIRES**

There are three basic ways to extinguish fire. This includes:

- i. **Smothering:** Which means the removal of oxygen or the dilution of air in the vicinity of fire.

The effect of smothering is obtained by the application of foam, CO₂ or dry chemical extinguishers and/or any action taken to restrict the access of oxygen into the source of fire. This eliminates one of the elements and stops the burning. For example, woolen blankets thrown around a person whose clothing is on fire shuts out the oxygen and extinguishes fire.

- ii. **Quenching:** Which means the reduction of heat below its ignition temperature. The effect of cooling is obtained by the application of water.
- iii. **Starvation:** The fuel supply or combustible materials is removed from the source of fire.

3.3.3 **CLASSES OF FIRE**

There are four types, which all workers should be able to recognize and for each type, know the action required.

- i. **Class “A”** This is fire involving solid fuel such as wood, grass, paper, clothing, rubbish and bonfires. The methods of extinction are cooling with water and starvation.
- ii. **Class “B”** The combustible material is a flammable liquid or gas, such as cooking gas (LPG), petrol, oil paint, hydrogen, acetylene. The methods of extinction are cooling and starvation.
- iii. **Class “C”** This is a fire involving electrical equipment and often faulty leads of portable electrical equipment. Carbon dioxide extinguishers can be used.
- iv. **Class “D”** This is fire involving metals. This class of fire is difficult to extinguish and only special equipment are used. Carbon dioxide and dry chemical powder or sand is suitable for extinguishing class “D” fires.

3.3.4 **PORTABLE FIRE EXTINGUISHERS**

General

These are:

- i. **Carbon dioxide (CO₂) extinguisher**

These are available in various sizes and models ranging from 5lb to 20lb. They are normally filled with CO₂ under pressure in liquid form. The CO₂ when directed at the base of the flame cools and smothers the fire. After the fire has been extinguished, the room should be ventilated in order to get rid of CO₂. Suitable for class “C” fires.

- ii. **Water Extinguishers**

This is a container filled with water and pressurized, usually by CO₂ in a cartridge. The water cools and quenches the fire. Suitable for class “C” fires.

- iii. **Dry Chemical Powder Extinguisher**

There are two types – the stored pressure type and the gas cartridge type. These extinguishers work in exactly the same way water extinguishers do but dry powder is used in place of the water. This

type of extinguishers is effective on small LPG and inflammable liquids. It cools and smothers the fires.

iv. **Chemical Foam Extinguisher**

These are available in 2-gallon and 10-gallon sizes. Its effect on the fire is smothering or blanketing and cooling. It is usually used on fires involving flammable liquids. Foam is very effective on oil fires and is more suitable than dry chemicals for preventing reignition.

3.3.5 **Fire Prevention**

CAUSES	PREVENTION
1. SMOKING MATERIALS Smoking near flammable materials and in forbidden area	Smoking should not be allowed in forbidden areas. Dispose of matches, ashes and cigarette butts in proper receptacles.
2. ELECTRICAL DEFECTS Electrical defects generally due to poor maintenance, mostly in electrical wiring, motors, computers, printers and plotters.	Only approved equipment should be used and regular maintenance should be established. Never overload circuits. Use caution when operating hot plates, coffee pots,. Turn off appliances when not in use.
3. FLAMMABLE	Good housekeeping. Property store and dispose of all materials that may be fire hazards, including cleaning fluids, photocopier inks and oily or solvent-soaked rags.

3.3.6 **Fire Fighting**

Every employee shall be trained on how to activate a portable fire extinguisher and fight fire in its infancy. Regular fire fighting drills and evacuation shall be rehearsed from time to time.

On discovering a fire:

- Raise an ALARM or SHOUT Fire! Fire!! Fire!!!
- Attempt to extinguish the fire using a portable fire extinguisher but do not endanger your life.
- Get out of the place.
- Ensure that all personnel, other than those fighting the fire do not enter the danger area.
- Assess the extent of the fire and if it is large or cannot be extinguished, call the local fire brigade for assistance.

P P P

The “Three P’s” about using fire extinguishers. Always remember the “3P’s” when using a fire extinguisher.

1. PULL the pin (or release the lock latch)
2. POINT the nozzle, horn or hose (at the base of the fire).
3. PRESS the handle. Sweep from side to side at the base of the fire until it goes out. But if the fire gets large. GET OUT FAST!

3.4 **ELECTRICITY**

3.4.1 **ELECTRICAL HAZARDS**

Electrical wiring fixtures, equipment and machinery can be hazardous. Electricity can fire, explode, burn, shock or even kill personnel. If you are shocked, your muscle can contract violently causing serious falls or accidents. When electrical equipment is not turned off after use, the next person to use it may not know the power is on. That person can be shocked or injured.

3.4.2 **ELECTRICAL SAFETY**

Protect yourself and others by following these important rules for electric safety.

1. Don't use any appliance or machinery while you are touching metal or anything wet.
2. Unplug machinery and appliances before clearing, inspecting, repairing or removing anything from them.
3. Keep electric equipment, machinery and work areas clean. Oil, dust, waste can be fire hazards around electricity.
4. Keep access to panels and junction boxes clear.
5. Store flammable materials away from electric heat sources and lights.

SECTION IV

EMERGENCY RESPONSE PROCEDURES

4.1 FIRE DRILLS AND ESCAPE PROCEDURE

A fire drill is an emergency preparedness exercise through training and rehearsals which ensures that in the event of a fire.

The personnel who may be in danger acts in a calm and orderly manner. Personnel with responsibility to ensure the safety of all concerned discharged their assigned duties. If necessary, escape from the building is done quickly and appropriately.

EVACUATION PROCEDURES

Fire routine will generally be based on the following sequence:

- i. Alarm operation
- ii. Power outage to ensure the stopping of certain process/machine and isolation of power supplies.
- iii. Call fire brigade (specific instructions) where fire service is available.
- iv. Evacuate the building/factory as quickly as possible.
- v. Assemble away from the fire/emergency site at a designated safe point.
- vi. Carry out roll call to account for everybody.

All employments shall be instructed to make certain that they are familiar with means of escape, and with procedure to be followed in the event of fire. A written notice to serve as a constant reminder should be posted on all notices boards for all to see. Training sessions shall be arranged to cover the following areas:

- i. The actions to be taken on discovery of a fire.
- ii. The action to be taken upon hearing alarm.
- iii. The method of raising the alarm and fire alarms location.
- iv. The location and use of portable fire extinguishers.
- v. The knowledge of escape routes.
- vi. The closure of doors and windows.
- vii. Stopping machines and switching off power where appropriate.
- viii. Post emergency telephone numbers of fire bridged and clients fire service.
- ix. Evacuation of the building and assembly point.

Repeated practices of the routine through regular drills will be necessary to ensure that details of actions and procedures are fully understood for effective implementation in the event of an emergency.

4.2 FIRST AID

Fire aid is an immediate skilled assistance applied to a person or group of persons injured or taken ill before medical care can be obtained. However, in first aid, there are three guiding rules to be observed.

- a. Make a quick analysis of the situation with careful observation and call for assistance.
- b. Do not move the victim unless he/she is in a position where further injury is likely.
- c. Ensure all actions taken, do not cause additional harm or discomfort.

If victim stops breathing, open airway and resuscitate.

If bleeding is present, control with pad and bandage.

There shall be provision for a well-equipped FIRST AID BOX to be manned by trained First Aiders.

First Aid seminars will be organized for all staff. It is mandatory for all staff to attend the seminars.

4.2.1 FIRST AID IN AN EMERGENCY

In an emergency, when no other help is available, knowledge of basic first aid can assist recover and even save life. The following are standard practiced procedures for the initial treatment of some common injuries and ailments.

COLLAPSE

Shake the victim and shout, "Are you alright?" If there is a response, simply shake the person from back of throat.

If not, first lay the person on side and tilt head back without touching neck. Open mouth, hold nose and blow air mouth until chest rises. Watch for chest to fall after inhalation. Listen and feel for exhalation. Repeat mouth-to-mouth if necessary, 5 times a minute for adult, 20 times a minute for children.

If breathin resumes, lay the person on side with a neck extended and head downward. If the person does not respond to stimulus, blood circulation may have been impaired. Without proper training, external heart compression should not be attempted.

HEART ATTACK

If severe pain is experienced in the chest or if there is an unaccountable "Referred" pain in the arm or back, a heart attack may have occurred. Go to the nearest hospital immediately.

POISONING AND DRUG OVERDOSE

Try and identify poison or drug and collect any tables, containers, syringes, if found. Do not try and induce vomiting or give any fluids without proper advice. If unconscious, treat for collapse. Rush the person to the nearest hospital immediately.

BURNS

Quickly cool the sufferer with fresh cold water, cover the burn with clean cloth. If burns are severe, take victim immediately to the nearest hospital or call for ambulance. The first 48 hours after a burn, injuries are critical. Take care to avoid infection.

ELECTRIC SHOCK

Try and find source of shock and turn off power if necessary. Do not touch victim if current is active. Treat for collapse.

CHOKING

Try to remove any obstruction from throat with fingers while head is face down. Strike middle of back several times. Repeat if necessary or treat for collapse.

BLEEDING

Apply firm pressure to wound with pad or hand and raise injured limb, if affected, to reduce circulation.

DROWNING

Treat for collapse.

4.3

TABLE 4.4

S/NO	QTY	ITEM	USES	DOSAGE
1.	1 Bottle	TCP/Iodine	For treating wounds	Dab wounds with lotion or use cotton wool to cover wound.
2.	1 Roll	Cotton wool	For clearing wound, etc	Use to cover wounds, burns and scalds before plaster or bandages.
3.	3 Small 3 Medium 3 Large	Gauze	For covering wounds	Use to cover wounds, burns and scalds before plaster or bandages.
4.	2 Piece of 2-ft	Cotton bandages	For supporting broken bones and covering wounds and burns	
5.	1 Packages 1 Roll	Pressing strip zinc oxide plaster	For covering dressing	Use as required to cover dressing
6.	50 Tables	Panadol	For all types of pain and headache	2 tablets taken 3 times a day
7.	20 Tables	Phernegan	For itching after capquine or itching generally	1 tablet taken 3 times a day best taken before taking capquine.
8.	50 Tablets Capquine	For high fever	4 Tablets immediately after meal and 2 tablets after 6 hour, then 2 tablets daily for days.	
9.	1 Bottle	Mist kaolim	For frequent stooling	3 Teaspoons, start and repeat after 6 hours.
10.	1 Bottle	Mist magnesium Trisilicate	For abdominal pains	2 Teaspoons start and repeat after 6 hours.
11.	1 Bottle	Benylin Expectorant	For cough	2 Teaspoons start and repeat hourly for 5 days.
12.	1 Bottle	Lof Hibitane	For cleaning wounds	Use lotion on cotton wool to clean wounds, burns and scalds.
13.	3 Pieces	Triangular bandages	For supporting broken bones and covering wounds and burns.	
14.	1 Bottle	Eye drop	Eye ache and red eyes	2 drops start and repeat every 4 hours.

4.5 **WORKING IN SWAMP AND WATER BORNE AREAS**

1. Familiarize yourself with all safety regulations and emergency procedures in effect at swamp/water borne area.
2. Attend instructions and safety briefing session each time you to work in a swamp or water-borne area.
3. It is mandatory for all working in such swampy areas to participate in safety drills.
4. All protective wears especially life jackets or work vests, must be worn by personnel working in swamp or water borne area.

4.6 **TRANSPORTATION IN WATER BORNE AND SWAMPY AREAS**

It is important to plan for the transportation of the required equipment and materials well in advance.

Water Transportation comprises of 3 categories:

- For Passengers
- For Materials
- Marine equipment and like tugs, dredgers and self-propeller crafts.

Every marine vessel will appropriate safety equipment. The crew shall be trained in the use of all safety equipment, life rescue and drowning.

Life jackets will be provided for each member of the crew/passenger. The Quartermaster, River master or Marine assistant must possess valid certificate of proficiency.

The Quartermaster shall ensure that boats berth and are secured before passengers and crew are allowed to embark or disembark.

Every vessel must be navigated within safe speed regulations to avoid obstructions, damage or danger to itself or other vessel. The maximum passenger carrying capacity shall be strictly followed.

4.7 **USAGE OF BOATS**

1. Boats shall be the means of transportation of workers in water borne areas.
2. Smoking is prohibited during transportation period.
3. On sighting a person falling over-board, immediately raise an alarm and throw the nearest life buoy in the direction of the fallen person.

The alarm should be 'MAN OVER BOARD'

When alarm is sounded for abandoning the vessel and the order to prepare for evacuation has been given, all passengers must abide by the following safety procedures:

- i. Put on warm clothing
- ii. Put on life jackets and vests
- iii. Loose ties, laces and belts.
- iv. Follow the given procedure for evacuation.
- v. Proceed to evacuation area without luggage.

4. When jumping into the water for safety and survival purposes, abide by these safety procedures:
 - i. Ensure that you put on life jackets and survival vest and tie it firmly before jumping into the water.
 - ii. Take off safety hats and boots before jumping into the water.
 - iii. Look carefully for the safest area to jump to avoid falling on objects, obstructions.
 - iv. Place one hand over the mouth and nose and firmly grasp the life jacket over either shoulder with the other hand.
 - v. Keep elbows downwards tightly against the chest and take a deep breath before jumping into the water.
 - vi. Jump with feet first, keeping body erect and legs together.
 - vii. Upon surfacing, make every effort to stay together with others and assist for the survival of others if necessary and feasible.
 - viii. Give the necessary First Aid treatment for the survival of rescued persons from water body.

WASTE MANAGEMENT PLAN

All employees shall have appropriate Environment training to create awareness and motivate them to observe applicable standard of environment performance. The indiscriminate discharge or dumping of harmful waste into the physical environment is strictly prohibited.

In order to ensure sound environmental practice and compliance with applicable environment standards, a waste management plan is documented as follows:

- Establish exactly what types of waste and how much of each are produced at each site.
- Ensure all waste is properly stored and labeled on site and there are written procedures for cleaning up spills.
- Ensure all materials are transferred only to properly authorized contractors and disposed of at properly authorized site, i.e. identify and record who the carriers are. What their registration number(s) is (are), who is the waste regulation authority, what is(are) final disposal site(s).
- Establish a system of records of all waste transfers for inspection by the environment protection agencies.

SECTION VI

SAFETY IN EXCAVATIONS

In any excavation, shaft or tunnel, more than 1.2m deep, where there is risk of material collapsing or failing, proper timbering, trench sheeting must be used to safeguard operations. Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists, or could reasonably be expected to exist, the atmosphere must be tested before employees enter trench excavations greater than 1.2m.

The safe alternative trenching techniques are:

- Battering the sides: i.e. cutting the sides of the excavation back from the vertical to such a degree that fall of earth is prevented.
- Benching sides: The sides of the excavation are stepped to restrict the fall of earth to small amounts.
- Inspection must be everyday that men are working in any type of excavations more than 1.2m deep, where there is risk of material collapsing or falling.

If there is any risk of flooding in any excavation, ladders or other means of escape must be provided.

If excavations are to be carried out near existing building or structure, shoring or other support must be provided to prevent collapse of the building structure.

Excavations more than 1.98m deep near where men work or pass, must be protected at the edge by guardrails or barriers or must be securely covered, where the excavation is accessible to the public, even the most shallow depressions should be fenced so that members of the public are not exposed to risks to their health and safety. Materials, plant, machinery, etc. must be kept from the edge of all excavations to avoid collapse of the sides.

SECTION VII

SCAFFOLDING PROCEDURE

A scaffold is a temporary structure, which may include guardrails, toe boards, working platforms, gangways, ladders, etc.

A scaffold should be erected on well-prepared foundation. Before using any scaffold, check that it is clean, free from cracks, broken members or any other defects. If the scaffold is damaged, have it repaired or obtain another one. Never use shift or defective scaffolds.

Metal scaffold members are conductors. Therefore, they should not be used in places where they can come in contact with electrical circuits.

Do not attempt to reach too far in any direction as you may lose your balance and fall. Every scaffold should:

- * Be erected, altered or dismantled under the direction of a competent person.
- * Be constructed of a suitable and sound material.
- * Be properly maintained with parts secured to prevent displacement.
- * Have all standards or uprights, ledgers, putlogs, ladders erected in accordance with laid down standard procedure and practice.
- * Be stable.
- * Be inspected by a competent person everyday or after exposure to adverse weather conditions and report issued.

Working platforms, gangways at runs shall be:

- * Closed boarded, planked or plated with boards secured to prevent movement and of adequate thickness.
- Fitted with foot laths if slope exceeds 1 in 4;
- Of adequate width for purpose provided
- Fitted with guardrails and toe boards
- Safe underfoot

Ladders shall be:

- Be of good construction, suitable and sound material
- Be securely fixed and properly supported
- Be on a level and firm footing
- Extend above the highest platform to be reached unless there are adequate handholds.

- Not to be used for risers over 9m without an intermediate platform.
- To preserve ladders they may be treated with a clear preservation or be varnished but must be painted. All rugs must be sound and properly secured to the site.

SECTION VIII

PERMIT TO WORK

A permit to work should be used whenever the method by which a job is to be done is likely to be critical to the safety of those involved, other nearby workers, the public or the plant itself. It is therefore necessary to use a procedure to ensure that potential hazards are identified and that all precautions are taken into consideration before commencement of work. Such a procedure requires a formal written statement to be signed by authorized persons prior to its issue to the individuals responsible for performing the work, to the effect that the equipment is safe for work to commence.

SCOPE

Permits to work are used for non-routine work when the scope and boundaries are unique to that particular task or activity. The type of work may include:

Hot work of any type, or the use of tools or equipment which may create incentive sparks, in an area where there is the possibility of a flammable concentration of vapour.

Entry into confined space;

The disconnection or opening of pipelines or vessels, which have contained flammable, toxic or harmful substances.

Work on machinery or electrical equipment.

RESPONSIBILITIES

(a) Permit Issuer

The permit issuer shall be at supervisory level or above and trained and competent in permit issuing procedures to ensure that all safety precautions are identified and observed.

The permit issuer shall:

Inspect the work area

Anticipate and identify hazards

Define safety precautions to be taken

Discuss requirements with Permit Acceptor

Issue permit to work

Ensure that all conditions stated on a permit to work form are maintained.

(b) Permit Acceptor

The permit acceptor shall be the person who is in line control and responsible for carrying out the work described in the permit to work.

* The Permit Acceptor shall:

* Ensure that the nature of work is understood

* Ensure that the work procedure and the potential hazards are understood.

* Comply with the safety precautions and constraints as specified on the permit to work.

* Ensure that only authorized work is carried out and confined to the area defined in the permit to work.

* Ensure that the equipment is brought to operational readiness.

* Remain in direct line supervision for the duration of the permit to work.

PERMIT TO WORK DOCUMENTATION

The form to be used for permit to work procedure is shown in Appendix III.

Appropriate entries shall be made on the forms and duly signed by competent persons in sections applicable to them.

LIST OF HAZARDS AND PREVENTIVE MEASURES

HAZARDS	PREVENTIVE MEASURES
1. Fire Hazards	<ul style="list-style-type: none"> • Avoid starting fire by keeping surfaces clean and free from inflammable materials. • Take safety precautions in the storage of oils, gasoline, diesel oil, oxygen and acetylene gases. • Ensure that fire extinguishers are in good condition and easily accessible. • Organize fire fighting teams; • Observe the “No Smoking” rule signs. • Switch off all electrical appliances and remove plugs from sockets before closing for the day.
2. Hazards due to poor storage	Keep diesel oil storage area very clean.
3. Danger of falling load object.	<ul style="list-style-type: none"> • Always wear a hard hat and safety shoes • Avoid throwing tools/materials. • Do not pass under a load.
4. Hazards due to work above water.	<ul style="list-style-type: none"> • Ensure all staff engage in work are certified swimmers. • Wear a work vest if there is any risk of falling into water. • During transport by speedboats, all staff must wear life jackets.
5. Hazards due to presence of explosive gases	<ul style="list-style-type: none"> • Inform personnel of the danger of explosions. • Enforce the use of valid work permit.
6. Hazards related to road transport.	<ul style="list-style-type: none"> • Drivers must obey all road rules. • Only vehicles licensed for personnel transport shall be used. • Nominate drivers to Defensive driving courses. • Do not drive beyond the speed limit specified for the road condition.