

SAFETY, HEALTH,  
&  
ENVIRONMENTAL MANUAL

SAFETY RULES & REGULATION



## **MANAGEMENT I SAFETY POLICIES**

### **POLICIES PRACTICES AND GUIDELINES**

To get our work environment safe and secure we practice a policy that is suitable for each case & location. The following policies, practices and guidelines are as follows:

- Environment, Health and Safety policy.
- Security and Crisis Management practice
- Ethics integrity policy and
- Ethics integrity improper payments Guidelines.

The policies practices and guidelines shall be read with any necessary changes having regard to the status of contractor being an independent contractor rather than an employee of NASHTON or any of its Affiliates Contractor shall ensure that the personnel comply with the spirit and intent of the policy and practice in conducting the services here under.

### **SAFETY AND ENVIRONMENTAL EXPECTATION.**

NASHTON and its Affiliates expect their Contactors to:

1. Refuse any work that they believe poses an imminent danger to themselves or to their fellow workers “imminent danger” means any danger, which is not commalfor the worker to face in the course of the job, or any danger under which a person would not normally carry out their work.
2. Provide NASHTON with documentation of existing and enforced safety policies and programs.
3. Adhere to all the NASHTON employee safety responsibilities as well as cooperating with the company and any other contractors to provide a safe workplace contractors are responsible for following safe work procedures and codes of practice required by law and by NASHTON
4. Identify, document and minimize hazards through a formal hazard assessment process.
5. Establish and implement a work permit / work clearance program for hot work and other types of work with significant hazards.

6. Ensure that their employees are qualified to perform the work to which they are assigned and be in a position to demonstrate competency.
7. Ensure that the work to be performed by subcontractors is conducted in a safe.
8. Inform company of any hazards present or hazards that may develop in the course of their employment due to NASHTON activities
9. Have an environment, health and safety management program that meets the minimum requirements and legislation of NASHTON & the Client.
10. Implement their own emergency response plan where they are the prime contractor (i.e. Drilling contractor).

### **ENVIRONMENT, HEALTH AND SAFETY AUDITS & INSPECTIONS**

NASHTON reserves the right to conduct internal or external audits as necessary, and Contractor will comply with any such requests.

### **ENVIRONMENT, HEALTH AND SAFETY MEETINGS AND COMMUNICATIONS**

- 1- Safety meetings will be held on a daily basis and preceding any atypical operations. The Contractor will also participate in the safety meetings that are held by the prime contractor as required.
- 2- The EHS expectations and Requirements in this agreement will be reviewed in a meeting between manager and personnel. Responsibilities for EHS matters will be clearly assigned.
- 3- Communications on EHS matters will adhere to the requirements set out in the contract.
- 4- Site manager shall complete and provide to main office on a monthly basis an EHS monthly performance report.

### **SECURITY AND CRISIS MANAGEMENT PRACTICE**

NASHTON are committed to minimizing the health, safety and security risks to directors, officers and employees and certain other persons who act in the capacity of a director, officer or employee ( hereinafter referred to as “individuals”) Nashton pursues a policy of continual improvement in the measures taken to protect the health, safety and security of all individuals.

To accomplish this NASHTON will:

- 1-** Provide a secure working environment by protecting individuals, assets and operations against risk of injury, loss or damage from criminal, hostile or malicious acts.
- 2-** Conduct security risk and threat assessments as part of NASHTON `s entry strategy into new business ventures.
- 3-** Routinely assess security risks and develop processes to ensure those risks are effectively managed or mitigated.
- 4-** Monitor and measure security performance on a continuing basis and maintain an appropriate and effective insurance program.
- 5-** Comply with all applicable laws and regulations.
- 6-** Provide security and protection training for individuals, as required.
- 7-** Maintain an Emergency Management plan, train individuals in its use and conduct simulated emergencies to test its effectiveness.
- 8-** Continue to evaluate and improve policies and operating practices raking into account changes in laws and regulations, technical developments, industry standards and NASHTON `s operations and.
- 9-** Require individuals to comply with all security measures and to report to the appropriate authority any security breaches, unethical conduct and conflicts of interest.

This security and Crisis Management Practice is implemented through the application of the Security Management System, which is an integral part of NASHTON`s overall management approach NASHTON will ensure that the resources necessary to support this security and Crisis Management practice are provided.

## **I. GENERAL SAFETY**

### **A. TRAINING**

The objective of a safety -training program is to:

- 01 Stress the importance of safety.
- 02 Teach how to avoid accidents.
- 03 Contribute to developing a project's safety.
- 04 To guide workers into exercising safe working practices

The focal point of this program is the safety / training Manager who will supplement it with any specific client training requirements. The training should emphasis the different subjects as applicable to the specific project activities and should be tailored for the separate categories of employees on the job A training facility ( at least one room ) should be provided on site which will contain training material such as video tapes, posters, and items from previous accidents used for demonstration purposes.

Short single concept sessions will be conducted for the different crews by their supervisors on an every other day basis to cover their activities of work while supervisors weekly safety meetings will be coordinated by the safety /Training Manager to discuss the overall safety aspects of the project. Records for these meetings will be recorded and kept by the Safety / training Manager.

### **B. SAFETY MEETINGS AND MATERIAL**

The backbone of any safety program is a formal weekly safety meeting. Generally, safety meeting should not be over thirty minutes in duration and should cover a safety subject pertinent to the operations.

Material for weekly safety meetings is available from a variety of sources, such as safety films, videos, and pamphlets, dealing with specific safety hazards and safety procedures. The safety / training Manager, supervisors, and foremen will also he utilized to give some variety to the weekly safety meetings. Specific safety situations that occur on a project are always good topics for safety meetings.

### **C. SINGLE CONCEPT SESSIONS**

An important ingredient of an effective safety program is the single Concept session, which is conducted prior to performing a unique major work activity. These sessions should be short. They should be conducted by the supervisor to ensure that all of the company and contract personnel involved in the activity are completely aware of the hazards involved and of the safe procedures to be followed.

Single concept sessions shall be conducted prior to performing any maintenance or operating activity which is not routinely done and in which a certain hazard exists. Typical applications of single concept sessions would be those conducted prior to major plant repairs, starting a new pipeline, starting a new building project, etc.

### **D. SAFETY RESPONSIBILITY**

The effectiveness of any safety program is dependent upon the observance of safety rules by all employees and the enforcement of these safety rules by the safety Manager and Supervisors. The violation of any procedure or safe practice called for in this manual is a violation of company policy. As in any other aspect of work, a clear definition of responsibilities is required so that each person knows what he should be doing.

The specific responsibilities towards safety of individual designations, along with the company organization chart are shown under Appendix attached.

### **E. SAFETY ENFORCEMENT**

The safety Manager, Supervisors, Foremen, and each employee will administer safety enforcement.

Disciplinary Actions: personnel disobeying a safety regulation will receive written notice. The written notice describes the time and date the safety regulation was violated /disobeyed. Also, written notices will state a description of the regulation and the number of the written notice being issued.

Safety regulation enforcement shall be executed as stipulated in safety rules and regulations.

After one year from the date the written notice was issued, it will no longer be considered for disciplinary purposes.

The written notices will become a part of the employee's personnel file. These notices will be considered on the annual review date and can offset or cancel any prospective wage increase. Safety awards will be made to employees, who have a clean safety record, i.e., if no notices or recordable accident forms are in personnel files

#### **F. NEW EMPLOYEE ORIENTATION**

The following employees shall be given a formal safety orientation before being assigned to their work area:

- 01 Every permanent new employee
- 02 Temporary employees who are utilized as relief for permanent plant and field personnel in an operating or maintenance position
- 03 Employees who have transferred from a field project to a plant project who have not had safety training applicable to that used at the plant project.

The following new employees should not be required to have a formal safety orientation. However, they should be instructed in the specific hazards and precautions to be taken regarding their particular duty:

- 01 Secretarial and clerical employees
- 02 Temporary employees utilized in office work or in a capacity or area of low exposure to accidents.
- 03 Temporary employees who have been employed for specific maintenance work of short duration.

The safety Manager and / or Supervisors will conduct the safety orientation of each new employee. When a new employee reports to work, the employee shall be issued the general safety policy and procedures, OSHA'S communication standard "Right-To-Know "as well as

other pertinent instructions and procedures pertaining to safety the new employee should read these documents and note any areas or Items about which questions arise. The new employee's safety orientation should be completed before he/she begins work.

### **G. ORIENTATION Checklist**

A checklist shall be utilized and the formal safety orientation shall cover the following items:

- 01 A discussion of the General safety policy and procedures, and OSHA'S Communication standard "Right-To-Know" to establish the new employee's general comprehension of the information in these documents.
- 02 A discussion with the new employee regarding specific hazards within the plant, field, and in the new employee's specific job.
- 03 Instruction in the use of protective equipment such as proper clothing, hard hats , safety glasses, and ear plugs,etc.
- 04 The availability of this safety equipment through our safety Department should be pointed out. Upon leaving, employment personnel will be required to return all safety equipment to the safety Manager.
- 05 Instruction in the use of emergency equipment such as fire extinguishers, first aid equipment, and fresh air equipment. If fresh air equipment is to be used within the operations, the new employee shall put on the equipment and become familiar with the use of the equipment.
- 06 A tour of the new employee's work area, pointing out the specific potential hazards or precautions to be taken on the job.

Upon conclusion of the orientation. The new employee and the safety Manager performing the orientation shall sign the orientation sheet. Any questions that the new employee may have should be resolved at this time. New employees shall be advised of the company's philosophy, policy, standard, and enforcement of safety regulations. At this time the potential



consequences of safety violation shall be pointed out to the new employee. The completed and signed copy of the orientation sheet shall be filed in the employee's personnel file.

#### **H. GOOD HOUSEKEEPING AND WORK HABITS**

A high standard of housekeeping shall be maintained at NASHTON facilities and /or work locations at all times. Good housekeeping is not something that can be accomplished by periodic inspection. It is a day - by day activity that must not give way to convenience or the pressure of other work.

One of the most important factors in housekeeping is good work habits. If poor work habits prevail, they will influence the job performance. Good housekeeping will quickly become a habit if tools and work equipment are conveniently located.

Large and prolonged accumulation of waste and junk material shall be avoided. Junk material should be disposed of at intervals frequent enough to prevent such accumulations.

#### **I. WAREHOUSE SAFETY**

All chemicals and flammable liquids should be stored away from heat sources. These shall be neatly stored away from direct sunlight, electrical apparatus or other sources of ignition.

The leading cause of injury in the warehouse is from lifting. Four important things to remember when lifting are:

- 01) Lift comfortably, with legs bent at the knees. Lift with your legs, not your back.
- 02) Avoid unnecessary bending, twisting, and reaching out.
- 03) Lift gradually and slowly.
- 04) Keep in good shape physically.

All tools and work equipment shall be maintained in good condition. Those, which are not, shall be turned over to the Maintenance Department with a with a work order and full description of all repairs needed.

All floors and walkways shall be kept clean and free of any and all substances, which could cause a fall or a slip.

Equipment yard and grounds should be carefully maintained. Areas around tanks, pipe, buildings, etc. and throughout the yard and within three feet (3) of the fence should be free of weeds, trash, etc.

Items on shelves shall be stocked in a neat, orderly fashion. Avoid stacking heavy items on top shelves and avoid over stacking

#### **J. OFFICE SAFETY**

The office environment has its potential hazards as any other place of work. Complacency is the greatest cause of accidents. Most office workers are lulled into believing that serious accidents just do not happen in offices.

The following precautions shall be observed at times:

01) Floors - Floor finishes shall have anti-slip qualities. Loose carpet, defective tiles or boards, warped and worn floor mats under chairs, and plastic floor mats shall be repaired or replaced to eliminate tripping hazards.

02) Aisles- passages shall be unobstructed. Waste baskets, telephone and electrical cords and outlets, low tables, and office equipment should be placed against walls, under desks or in some other suitable place to prevent tripping. File drawers, pencil sharpeners, or other objects should not jut into aisles.

03) Filing Cabinets - As one of the major causes of office injuries, file cabinets deserve extra attention. File drawers are to be closed with the handle only. One file drawer should be open at one time. Climbing on open file drawers is prohibited. Small stools used in filing areas are to be kept out of the aisles when not in use.

04) Material Storage- Boxes, paper, and other heavy objects must be stacked in such a way as to prevent an avalanche-type spill. The accumulation of trash and unused material shall be kept to a minimum and removed on a regular basis.

#### **K. SITE SECURITY**

A security procedure on the job site will prevent the loss and misuse of the company's assets and will help eliminate injuries caused by having unauthorized personnel intruding into hazardous work areas or causing unsafe acts.

A general security procedure as shown in Appendix II shall be implemented on all work sites and projects, however special emphasis should be given to the client's requirement particularly when dealing with work inside existing or operational facilities.

#### **L. ACCIDENT INVESTIGATIONS, REPORTS AND STATISTICS**

Every accident consists of a cause and a result. An accident involving a slight injury may reveal as many constructive conclusions as the investigation of any accident involving a fatality.

To learn from accidents however means that a system for retrieval of information must be set up and records must be kept of injury and damage experience.

In addition to our own needs our clients require information for their purposes. The procedure under Appendix III (attached) covers reporting requirements and the principles of accident investigation and analysis which are sound basis for any client requirement as well as for the improvement of safety programs.

#### **M. WORK PERMITS**

Work permits authorize the execution of an operation once certain specific or general protective measures have been taken, and at the same time they enforce the use of safety equipment. The implementation of work permit procedures is of vital importance when working inside existing or live plants and / or work sites.

Such permits must be written and issued by competent personnel and their aim will be to:

01) Provide timely information to all those people who are directly! indirectly involved in the work.

02) Define the conditions required for the workplace and the operators in the interests of safety.

03) Prescribe the observance of safety regulations, which are required by the Client's safety Department, Operating Authority, project Safety Engineer, etc

Upon the completion of work they certify that the equipment, plant or area which has been worked on is suitable for use.

The procedure in Appendix IV describes the types and the implementation of work permits.

## **N. SUBCONTRACTORS**

All personnel involved in BHTC. Projects, irrespective of their background, will abide by this Health, Safety, and Environment (HSE) plan.

Therefore all procedures, requirements, audits and plans mentioned shall apply in full for all subcontractors. To realize this objective the number of subcontractors will be limited as much as possible. In addition every effort shall be made to limit the presence of third presence of third party personnel on site.

Obviously in the selection process of a subcontractors past HSE performance and its current HSE plan shall be reviewed and the outcome shall play an important role to allow the overall project organization to target zero: no negative impact on people and environment during project execution:

Once a subcontract has been awarded, the subcontractor shall be issued complete or abbreviated sets of the project safety Regulations depending on the number and duration of the site visits by the subcontractor's staff.

## **II. PERSONAL SAFETY AND EQUIPMENT**

Accidents are frequently caused by not thinking about the job or by taking short cuts to save time or reduce the amount of work. The safe procedure for accomplishing each job should be known . If in doubt, ask your supervisor

### **A. LIFTING**

Listed below are seven principles, which should be observed when lifting. Setting the object down is essentially the reverse of lifting.

- 01) Consider the size, weight, and shape of the object to be carried. If the object is unduly heavy or cannot be handled easily, obtain assistance.
- 02) Set feet solidly. Usually, more effective effort can be applied if one foot is slightly ahead of the other. Position feet far - enough apart for good balance and stability.
- 03) Get as close to the load as possible. Bend the legs about 90° at the knee.
- 04) Keep the back as straight as possible, it may be far from vertical, but it should not be arched. Bend at the hips and not at the middle of the back.
- 05) Get a firm grip on the object and be sure that grip is maintained while lifting and carrying.
- 06) Straighten legs to lift the object and at the same time swing back into a vertical position.
- 07) Never carry a load that cannot be seen over or around.

Listed below are four principles that should be observed while carrying:

- 01) When carrying, change grip only after setting object down on a support
- 02) When changing direction is necessary, turn the whole body, including the feet. Twisting the body must be avoided.
- 03) When two or more persons are handling the same object, one person shall be designated to call signals. All the persons on the lift should know who this designated person is and should warn the person of any change in grip.
- 04) Heavy or bulky material to be carried a considerable should be handled mechanically .

## **B. PROTECTIVE EQUIPMENT**

All plant and field personnel are required, as a condition of employment with NASHTON, to utilize approved personal safety equipment at all times while on the job.

Baggy or loose clothing shall not be worn while working in the vicinity of moving machinery.

When special protective equipment is provided by the Company and designated for a given job, it must be worn.

## **C. EYE PROTECTION**

Flying objects, such as metal and abrasive grits, because most eye injuries Corrosive substances and poisonous gas or fumes also constitute an eye hazard Safety glasses and face

shields, which are required, are furnished by the company. Safety glasses shall be worn at all times within the plant area. Face shields shall be worn at all when there is a possibility of foreign objects entering the eyes. Such activities may be as follows:

- 01) Chipping, cutting or breaking stone, brick, and concrete.
- 02) Using chisels or other handled steel tools.
- 03) Using a wire brush to clean threads, fittings or metal surfaces
- 04) Handling on using chemicals
- 05) Grinding on abrasive wheels even though a glass guard is provided
- 06) Using compressed air for cleaning purposes.

Welding hoods or glasses with colored lenses are to be worn when employees are exposed to the glare of electric welding operations.

The use of prescription safety glasses is encouraged and purchased locally

#### **D. HEAD PROTECTION**

All personnel at all times within the plant and field locations shall wear safety hats.

#### **E. SAFETY BOOTS / SHOES**

It is required that safety boots/shoes be worn by all personnel at all times within the plant and field locations.

The wearing of tennis shoes, sandals, etc. which do not afford safety protection to feet is prohibited on the job

#### **F. GLOVES**

Gloves should be worn at all times when performing operations that expose the fingers and hands to cuts, scrapes, and burns. The company will provide protective gloves.

### **G. EAR PROTECTION**

Ear protection shall be worn in the those areas where signs of warning of sound levels exceed the maximum decibel level. The company will provide ear protection

### **III. FIRST AID**

First aid is the immediate, temporary care given to a victim of an accident or sudden illness until the services of a physician can be obtained . first aid should be limited to only that treatment, which is necessary to prevent death or further injury, relieve pain, and prevent or reduce shock.

All plant supervisors should be trained in emergency first aid. All injuries must be reported to superintendent, supervisors or safety manager.

#### **A. BASIC STEPS**

Treat the most serious conditions first: stoppage of heart, stoppage of breathing, bleeding, and shock

01)Send for ambulance or doctor

02)Keep victim comfortable.

03)Try to locate all injuries

04)Move victim only to get him out of danger.

05)Do not give liquids to a semi -conscious or unconscious victim

06)Remove dentures, if any, from the mouth of an unconscious victim.

07)If poisonous or suffocating gases are suspected, do not attempt a rescue without breathing equipment.

#### **B. BLEEDING - ARTERIAL**

Symptoms - Bright red blood spurting from the wound.

Treatment - Apply pressure directly over wound with as clean a dressing as available and maintain pressure until professional assistance is available. If the dressing becomes saturated, do not remove it. Cover the dressing with additional clean dressings. In most cases, bleeding can be controlled by this method. If bleeding is very, severe or continues. Apply hand pressure at the correct pressure point. As a last resort only, apply a tourniquet . treat for shock.

**C. . PRESSURE POINTS**

The four pressure points to remember are one on the inner side of each upper arm and one on the inner side of each thigh. Pressure is to be Applied to the brachial artery of the inner side of the right.

**D. TOURNIQUET**

A tourniquet is dangerous and should not be used if bleeding can be checked otherwise. Amputation is usually the only justification for a tourniquet. If necessary to use a tourniquet, mark TK on the victim's forehead. Do not release the tourniquet until the victim is in a hospital or doctor's care. Only a doctor should remove a tourniquet.

**E. BLEEDING - VENOUS**

Symptoms-Dark red blood is flowing steadily from a wound.

Treatment - place a compress, sterile if available, over the wound and apply direct pressure.

Elevate the bleeding part except in the case of a fractured limb. Loosen tight clothing , treat for shock.

**F. MOUTH -TO - MOUTH RESUSCITATION**

You may be able to save a life by the prompt administration of mouth -to mouth resuscitation.

Immediate Action is Essential. Do not wait for a doctor or try to transport a. victim to the hospital, only certified personnel shall attempt mouth-to-mouth resuscitation.

**G. SHOCK**

Shock is the normal reaction of the body to loss of blood or any serious injury. Shock should be suspected and treated even if all symptoms are not obvious. Shock can kill.

Symptoms - Face may be pale, dull, and anxious. Expression may be vacant, pupils are dilated, person is vague, eyelids are drooped. Cold perspiration is on forehead and palms of hands.

Skin is cold and clammy. Pulse is weak and shallow ;person is sighing, yawning or gasping.

Chills, nausea, and vomiting may be present.



Treatment - The victim should be laid down with legs elevated. Of the utmost importance in the prevention of and treatment for shock is to keep the victim warm . Wrap in blankets or warm clothing. In cold weather, external heat may be applied by using hot- water bottles, warm bags of salt or sand, and similar items. It is more important to he it is to add heat. Foreign objects should be removed from the victim's mouth tight clothing should be loosened. The victim should have plenty of air if he is unconscious, no liquids should be administered. If the victim is conscious, he may be given water, tea or coffee as hot as he can comfortably take it. Keep the victim calm and quiet and reassure the victim.

## **H. FRACTURES**

Symptoms- There is a loss of motion in adjacent joints, swelling, protruding bones, pain or tenderness. Compare with the corresponding part for deformity.

Treatment - if a fracture is even suspected, treat as such. First treat for arterial bleeding if present. Immobilize the limb and apply splints. An adjacent sound limb (leg, finger, toe ) will serve as a splint in many cases. Splint them as they lay . Note. Any straight stick or rolled paper and magazine may be used if long enough to immobilize the entire limb. A belt or belts, ties or strips of clothing may be used to tie the splint in place. Do not affix ties within six inches (6") above or below the break. Do not move a person with suspected fracture of the back except in an extreme emergency, and then only with extreme care. If the patient must be moved, slip a straight board under him and keep him in the same position as when the break occurred.

## **I. THERMAL BURNS**

Symptoms - There is reddening of skin and blistering or charring of tissues caused by heat (dry or moist) or electricity.

Treatment -Treatment of the burned patient consists of immersing the burned area in cold water as soon as possible after the injury. The temperature of the water should be comfortable cold for the patient. This is usually slightly under 70 F ice cubes may be added frequently to maintain a low temperature. Heat from the burned area raises the water temperature. Patients with burns over large parts of the body should be covered with a clean dry sheet or blanket and transported to a hospital immediately. Best results follow the earliest treatment after the

always treat for shock.

Do not insist on placing a sensitive burn under a cold water tap or shower. The pain caused by water pressure may offset the relief by the cold water and induce shock.

If burned surfaces are raw, cover with a loose, light dry dressing after the water treatment is completed.

Severe or extensive burns will need the skilled services of a team of doctors in a hospital

## **J. CLOTHING FIRE**

The following procedures should be followed in the event of clothing fire.

01) Do not run. Running fans the flames.

02) If possible, wrap yourself in a fire blanket or woolen coat. Wrap it around the neck first. Drop to the floor and roll over slowly.

03) If there is nothing to wrap in, drop to the floor and roll over slowly.

04) Try not to inhale flame. Put your hands on opposite shoulders and pull your arms against your face for protection.

05) If water is near, douse yourself, and roll in the spilled water. If clothing of another person is on fire, use similar measures. It may be necessary to physically force the victim to lie down so you can roll him. Then, if water is handy, apply at once.

## **K. CHEMICAL BURNS**

Treatment - if exposed to any chemical, flush the affected areas immediately and continuously with large amounts of water. Continue treatment for at least fifteen minutes to remove the chemical completely. then treat as any other burn. The cold water treatment is effective for chemical burns as well.

Treat chemical burns of the eye immediately by washing the out with a continuous, gentle stream of water from a faucet fountain. Continue treatment for at least fifteen minutes.

Eyes with a sterile compress and get the injured person to a doctor as soon as possible

## **L. HEAT PROSTRATION (HEAT STROKE OR SUNSTROKE)**

Do not confuse with heat exhaustion.

Symptoms - The face is red with no perspiration. The skin is hot and dry. The pulse is strong

and rapid. Breathing is like snoring with unconsciousness and high temperature. This usually begins with a headache, dizziness, depressed feeling, and dryness of mouth and skin.

Treatment- Remove the patient to a cool place and remove clothing lay the patient on his back. Apply cold packs to the head. When the victim is conscious, give him cool sips of water. Rub the limbs. No stimulants.

### **M. HEAT EXHAUSTION**

Not to be confused with Heat prostration

Symptoms-The victim's face is pale, there is sweating and the skin is moist and cool. The pulse beat is weak and shallow. The temperature is low. Symptoms usually begin with dizziness and nausea.

Treatment - Have the victim lie down and keep him cool. If the victim is conscious, give him stimulants and salt (half a teaspoon at a time with water at frequent intervals until a tablespoon in quart of water is given).

### **N. FOREIGN BODY IN EYE**

A foreign body in the eye must be removed immediately, preferably by a doctor. The eye must not be rubbed. This may drive particle deeper into tissues. If medical attention is required, place a light compress over the eye to protect it until the victim is taken to a doctor. Do not use an eyecup to wash the eye unless the cup is sterile. The use of a magnet to remove foreign bodies is prohibited.

### **O. CHOKING.**

Symptoms - Suspect food obstruction with every case of respiratory distress or loss of consciousness while eating.

Treatment - With the victim standing wrap your arms around his waist from the back. Make a fist with one hand and grasp your fist with the other. Place the thumb side of your fist below the rib cage slightly above the navel. Then press your fist into the abdomen with a quick upward thrust and repeat several times if necessary. This can also be done with the victim sitting, if you include the chair back in your wrap.

If the victim is unconscious or extremely tall or heavy kneel astride his hips, facing him and with one hand atop the other place the heel of your bottom hand on the abdomen below the rib cage and slightly above the navel, proceed with quick upward thrusts as described, repeating if necessary.

If victim vomits, turn him quickly on his side, face down using index finger to sweep out mouth to prevent sucking back into throat.

#### **IV. DRIVING SAFETY**

##### **A. GENERAL**

Company vehicles will only be provided when there is a normal ongoing, requirement for company transportation to accomplish an assigned responsibility. While using a company vehicle, employees will comply with all country and local laws pertaining to the possession and use of alcoholic beverages and drugs ( e.g. narcotics barbiturates, amphetamines, etc.)

##### **B. DRIVERS**

Company vehicles will only be operated by company employees with valid drivers licenses. Drivers will normally be full time employees on either the permanent or temporary payroll the use of casual employees or contract personnel as drivers should be avoided to the extent possible where a unit is assigned to a specific individual, that individual will be responsible for the upkeep pf the vehicle and will ensure the use of the vehicle complies with company policy. The vehicles will be operated in compliance with all appropriate country and local laws at all time

##### **C. DRIVING SAFEETY**

The basic goal is to minimize automotive accidents of all types to ensure the safety of Company employees and the general public and to avoid the expenses associated with accidents including vehicle repair medical costs litigation, and lost productivity.

Special emphasis shall be put on the hazards of long distance and night driving in desert locations and remote areas through driver training and journey management /man lost procedures implementation

#### **D. DRIVERS TRAINING**

Drivers will be selected initially and assessed periodically on the basis of physical fitness, experience, attitude, behavior and safety consciousness. Every driver after completing an initial one day training induction and familiarization program at the safety department will be monitored carefully for a probation period of two weeks by the safety Manager practical training while accompanied by an experienced driver or Transport officer might be necessary if the driver has had no previous experience in that particular type of roads or terrain. This will be followed by an assessment report by the trainer advising suitability of the driver for the job. Subsequent driver's induction and training seminars will be conducted using demonstration material as and when required as determined by the safety Manager.

#### **E. SAFTEY BELT**

Always buckle the safety belt in all driving circumstances and ask the passengers to do so, wither in a long or a short journey even inside the camp.

#### **F. JOURNEY MANAGEMENT**

For projects in remote or desert areas and while commuting between the different work locations ( camps sites fabrication and store yards, offices etc.) drivers should follow a journey procedure involving a written plan communicates to the Transport Officers at the locations concerned covering:

01)Name of driver, number and type of vehicle, passengers names or load details.

02)Time of departure

03)Estimated time of arrival.

04)Any intermediate station the driver might call upon and the roads he will follow.

Reports on arrival, breakdowns, incidents, or delays beyond certain time shall be communicated among the designated personnel who will agree on the necessary action to be taken.

A notice board where the drivers record their journey particulars will be maintained at the transport office

#### **G. MANLOST PROCEDURE**

The failure of a driver! vehicle to reach its destination by three (3) hours after its estimated time of arrival will initiate a man lost procedure by the officer at the arrival point which involves:

- 01) Report via telephone or radio link to starting point about non arrival
- 02) Report by similar means to Superintendent, project Manager /Construction Manager, safety manager consulting on further action, and keep them posted
- 03) Arrange to send a utility crew in one or more search vehicles equipped with first aid kits and necessary mechanics tools. The crew will be instructed on the possible roads that the missing driver might have taken beside the one in the journey plan as well as on the reporting procedure during emergencies.
- 04) At a certain stage if the search efforts were not fruitful and r discretion of the Superintendent project/Construction manager the matter will be brought to the attention of the client and or the local authorities for any possible help

#### **H. GENERAL SAFETY**

- 01) Extreme care should be taken while overtaking other vehicle when driving over dusty roads
- 02) The designated speed limits shall not be exceeded at any time
- 03) Break a long journey with rest stops e.g. 20 minutes every two hours driving and avoid to the possible extent driving at night in remote areas.
- 04) Scat belts shall be utilized at all times when a vehicle is in motion
- 05) No vehicle shall be driven which has an obvious mechanical problem affecting the safety of the vehicle. The transport section will maintain periodic mechanical inspection reports for each vehicle.
- 06) Al I country and local traffic laws shall be followed explicitly
- 07) Vehicles will be equipped to meet client's requirements e.g. roll over bars, fire extinguisher additional spare tire,. etc

#### **I. ALCOHOL AND DRUGS**

Alcohol is a drug and when taken by itself or in combination with other drugs, a driver's ability will be impaired.

Any person proven to be intoxicated while driving a company unit will be terminated.

When in the opinion of the driver condition for driving are unsafe for him it shall be the driver’s responsibility to stop driving.

**V. HYDROGEN SULFIDE (H2S) HAZARDS AND SAFEGUARDS**

H2S is a flammable material that is highly toxic. It can and does kill. Training and certification in general H2S safety is available from the Client’s Safety Department

**A PHYSICAL PROPERTIES**

Physical properties of H2S are highly explosive, highly corrosive. Irritant to respiratory system and eyes; low concentration smells like rotten eggs: high concentrations may be undetectable by a victim since it paralyzes the sense of smell. It is heavier than air, highly reactive in the presence of acids or strong oxidizing agents; colorless; soluble in water and oil and is deadly. H2S vapors are given off from gas (high sulfur content). Sour cued. And sour condensate. Gas containing H2S is being processed in some NGP scrubbers. Sewers. Pumps. Scraper traps , tanks . etc. Never stand on the side of an opening that would enable escaping H2S gas to blow into your face.

**BHARMFUL AMOUNTS**

Amount of H2S:

10 PPM (1/100 of 1%)	Noticeable “rotten egg” smell — safe for 8 hours of exposure
100 PPM (1/100 of 1%)	Destroys sense of smell in 3 to 5 minutes may cause eyes and throat to sting
200PPM (2/100 of 1%)	Destroys sense of smell within seconds and will cause eyes and throat to sting.
500PPM (5/100 of 1%)	30 minutes of exposure will cause loss of reasoning ability. Loss of ballonet. And respiratory paralysis Requires prom resuscitation
700 PPM (7/100 of 1%)	Unconsciousness results after a maximum of 15 minutes of exposure. Breathing will stop and death will result if not rescued promptly. Requires immediate artificial resuscitation
1000 PPM (1/10 of 1%)	Unconscious at once — death or permanent brain damage may result unless rescued promptly.

### **C SYMPTOMS**

Symptoms of H<sub>2</sub>S are burning pain in eyes, inflammation of eye tissues.

Pains in nose and throat. coughing. Shortness of breath, in Flomaton of stomach, headache, numbness, slow pulse, contracted pupils.

Convulsions, paralysis, and death.

### **D FIRST AID FOR H<sub>2</sub>S POISONING**

Rescuers shall wear fresh air equipment. No rescue attempt shall be made without fresh air equipment.

01) Remove the victim to fresh pure air immediately and keep victim as warm and comfortable as possible.

02) If victim is not breathing. Begin applying mouth-to-mouth resuscitation at once.

03) If H<sub>2</sub>S gets in victim's eyes, wash with clean, cool water or a weak solution of boric acid; spread eyelids so solution will contact the whole eye surface

04) Placing a wet towel or ice pack over victim's eyes will give temporary relief. Keep eyes covered and protected from the weather and sunlight.

05) Call a doctor and have victim taken to nearest hospital as quickly as possible.

Training and certification in general H<sub>2</sub>S safety is available from the Safety Department particular jobs which, in the opinion of the operating super-visor, a cheater is absolutely necessary.

When using a hammer and chisel , a face shield shall be worn.



## **VI. WORK EQUIPMENT**

### **A HAND TOOLS**

#### **1 GENERAL**

Use the right tool for the job. Use a pry bar, not a file; a hammer; not a wrench; a proper size wrench, not a pair of pliers. If possible, pull rather than push when using a wrench.

Keep tools in good condition. Chisels with mushroomed heads, dull saws, hammers with cracked handles or end wrenches that have spread jaws should be repaired or discarded. Use tools properly. For example. It is not safe to use a screwdriver on an object held in one's hand or to pull a knife toward the body or arm.

Keep tools in safe place and not on overhead areas or on ladders. Screwdrivers or other sharp objects shall not be carried in a pant pocket.

Using an adjustable wrench, the open jaw should face the user.

Hammering on a wrench is poor practice unless it is design for this purpose.

#### **2 CUTTING TOOLS- SHARP SAFE**

To prevent cuts on hands , metal fiber or heavy cardboard , guards should be made to fit over sharp edges of tools when not in use. Chisels, axes, and similar tools shall be kept sharp for safety and efficiency.

#### **3 STRIKING TOOLS**

Frequently inspect driving faces of hammers. Chisels, drift pins. Bars, and similar tools to eliminate mushroom heads. Broken faces. And other defects. A tool holder shall be used when driving tools are being used.

#### **4 PROPER USE**

Used the proper tool for the work involved ensure sealer efficiency. Obtain instruction or training before using too (hand or power) with which you are unfamiliar. Cheaters shall not be used on tools except on

### **BELECTRIC PORTABLE TOOLS AND EQUIPMENT**

1 Manufacturer's instructions shall be followed.

2 Goggles or face shields shall be worn where chips or dust may fly. Persons using drills, saws or grinders should wear no ties. Jewelry or loose clothing

- 3 Electric shock is the hazard most common in the use of electric, power tools.
- 4 Connect and disconnect portable electric tool accessories with the power switch on the tool in the off position.
- 5 Frequent inspection should be made to spot worn or broken external wiring.
- 6 When portable tools are used in wet locations, special precautions shall be taken to prevent electrical shock.
- 7 Most portable electric tools in use today have a three-wire (grounded) power cord. The ground is built-in, it does no good if the plug is not inserted into a grounded receptacle
- 8 Special attention shall be given to the used of extension cords. Cords should not be dragged over the floor or ground . They should be placed where they will not be run over by equipment. Frequent inspection of their condition is required

### **C GRINDERS AND BUFFERS**

To avoid an accident while using a grinder or buffer. Follow these rules

- 1 Protect your eyes, face, and neck by wearing a face shield
- 2 Securely clamp the work rest in position so that it is not more than 1/8” from the wheel . Check this distance frequently . but never adjust while the wheel is turning.
- 3 Turn off grinder while you are adjusting or gauging your work or when you are not using it.
- 4 Hold your work properly so that the angle of cut is in the same direction as the wheels option.
- 5 Do not side gringo or take too heavy a cut.
- 6 Don't apply work too quickly to a cold wheel.
- 7 The wheel should be true and balanced.
- 8 Do not wear loose fitting cloth gloves when using a grinder.
- 9 Install new wheels properly.
- 10 Proper guarding is to be utilized at all times.

### **D AIR HOUSES AND NOZZLES**

Air hoses present a tripping or stumbling hazard. Where possible, elevate hoses over aisles and work area. When using an air gun for cleaning, protect your eyes with goggles. Always check the area in which the air hose is used for possible hazards. Notify personnel in the area that the

air hose is being used. Keep hoses clean and reeled or hung when not in use. If air nozzle is to be used for cleaning (dust, etc.), it shall be regulated so that no more than 30 psi is available at the nozzle.

## **ESCAFFOLDS, LADDERS, AND WORKING AT HEIGHTS**

Personnel working at heights should use proper and safe scaffold material and access ways and should wear full harness type safety belts (if not walking or climbing ) tied to a suitable rigid part of the structure or the scaffold they are working on . Preferably metal tube scaffold will be used, only competent workmen shall carry out the erection. Alteration and dismantling work. Parts free from distortion or excessive corrosion will be used, and so fixed and secured to prevent accidental displacement, to be rigidly connected to the equipment or structures where possible. Erected scaffolds should be inspected prior to any use. Metal scaffolds and ladders should be inspected frequent to determine that there are no burrs, loose rivets, splits, or excessive curiosum Repair of defects must be made immediately or the ladder or seal folding material removed from service until repairs or replacements can be made. personnel who use scaffolds and ladders shall visually used them prior to use.

### **1 SCAFFOLDS**

Scaffold planks must be free of all defects which would reduce functional strength. Scaffolding must be securely fastened and supported. Wooden scaffold should not have a span longer than eight feet between supports. Scaffolds (including staging) elevated to a height of six feet or more must have guardrails and toe boards if practical. A safe access should be provided for climbing into scaffold. Keep small tools, bolts or other loose material in container when working on scaffold or on overhead platform.

### **2 LADDERS**

Place a ladder so that the horizontal distance from the base to the vertical plane of the support is approximately one fourth the ladder length between supports. (For example : place a 12 foot ladder so that the bottom is three feet away from the object against which the top is leaning) If at all possible , the ladder should be long enough to extend 3-1/2 feet above the top support. A ladder should never be used in a horizontal position as a walkway or in lieu of a scaffold plank.

Always carry a ladder with safety shoes to rear and front end elevated. Be extra careful when approaching doorways and corners. Never place a ladder in front of a door without first locking the door or placing someone on guard. When working on ladders, scaffolds or staging above surfaces exposed to traffic, the area below must be properly barricaded. Ladders should be secured at top with safety chain or rope if practical.

If your shoes are slippery, clean them before you climb. Face the ladder and use both hands while ascending or descending. Do not carry tools or equipment in your hands. Keep eyes on rung while climbing because there might be a broken rung. Don't reach out more than an easy arm's length from side of ladder. Do not leave tools on ladder. Do not permit more than one person on a ladder at one tie. When you use a stepladder, be sure the legs are extended before climbing. Ladders constructed of metal or with metal side rails should not be used in area where they may come into contact with electrical wires or electrical equipment. Make adjustments of extension ladders only when the user is standing at the base of the ladder so he can see when the locks are proper engaged

## **VII. FIRE PREVENTION AND SUPPERSSION**

Keeping fire useful instead of destructive depends upon one word "Control" It takes three things to start a fire. There are four way to stop a fire.

In order to start a fire there must be:

A Fuel - a combustibile material.

BHeat - enough to raise the material to its ignition temperature.

COxygen - (usually air).

One of the following must be done to extinguish a fire:

### **1 Eliminate the Air**

Replace the air with an inert gas. Exclude air with a noncombustible cover or use a chemical, which will dilute the oxygen in the air below the point required to support combustion

### **2 Remove or shut off the fuel supply**

Divert or shut off the flow in liquid or gas fuel supply lines.

**3 Reduce the Temperature Below the Ignition Point** Cool the burning materials with water or chemicals.

**4 Break Up the Chemical Chain Reaction.**

Dry chemical extinguishers attack a fire this way.

Although in fire fighting, all four of these methods may be used to extinguish a fire, it is important to select the most effective method and use it first

## **A TYPE OF FIRES**

### **1. CLASS A FIRES**

Ordinary combustible materials, including wood, paper, textiles, and plastics. Extinguishing agents are water. Water-fog, soda. And solutions.

### **2. CLASS B FIRES**

Fire in flammable material where a smothering or blanketing effects is essential. LPG, Gasoline , oils, greases, paints, thinner and petroleum plastic are among Class B flammables  
Extinguishing agents are steam, water-fog, dry chemical, and CO2.

### **3. CLASS C FIRES**

Fires in LIVE electrical equipment, requiring the use of an extinguishing agent, which will not conduct electricity Electric motors, controls , etc, are examples of a Class C fire.

Extinguishing agent are CO2 and dry chemical powder.

## **BEXTINGUISHER INSPECTION AND MAINTENANCE**

History has proven that nearly ever fire extinguisher failure can be traced to human negligence . The importance of properly charged extinguishers cannot be over emphasized. DO NOT tamper with fire extinguishers.

Keep fire extinguishing equipment unobstructed and in good condition. Recharge or have repaired, all fire extinguishing equipment that has been used or is in bad order.

Inspection is a “quick check” intended to give reasonable assurance that the extinguisher is fully charged and operable. The value of an inspection lies in the frequency, regularity, and thoroughness with which it is conducted. Inspections should always be conducted at regular

intervals.

An inspection should ensure that the extinguisher:

- ◆ Is at designated place
- ◆ Is properly tagged and the tag shows the extinguisher maintained within one year.
- ◆ Has not been actuated.
- ◆ Has not been tampered with . Make sure seal is in place and has not been broken.
- ◆ Has no obvious physical damage.
- ◆ Has no external corrosion
- ◆ Has no other impairments that might render the unit inoperative.

If the extinguisher fails any of the above, a breakdown inspection must be performed.

### **VIII. IN PLANT WELDING**

1. Use of welding equipment is restricted to employees who have been assigned to this work by a Supervisor. Permission to cut, weld or the use of other ignition sources will not be granted in hazardous locations where the necessary results can be obtained by less hazardous means.
2. Approval of the Supervisor must be granted before any welding or cutting is started.
3. When welding or cutting is done in a potentially hazardous area . the Supervisor shall verify that the area is safe for welding or cutting: and a fire extinguisher must be immediately available. In those cases where a change in ambient conditions. i.e. wind direction or velocity, could result in a hazardous situation . a fire watch shall be present.
4. Before any welding is started on a vessel that has contained flammable products, the vessel must be cleaned, ventilated, certified as " gas — free". And all lines blinded. The testing of the gas content should be done with an approved gas indicator in good condition.
5. When welding in a process area , the ground or cement slab should be kept continuously wet to control weld slag.
6. Welders and fire watches must be on the alert for hydrocarbon gas leaks or oil vapor condition that may start after welding has begun.

7. Welders and helpers at all times while welding and chipping. No matter how small the job must wear approved goggles. It is the responsibility of the welder to see that his helper wears proper type goggles.
8. If welding is going on in open air or in areas to other workers. A shield must be erected around welding job. This is absolutely essential in case of electric welding. Other workers must be warned to keep away from welding flame or arc and avoid looking at it.
9. Handle both oxygen and acetylene cylinders with care, even empty . Rough handling damages cylinders and may cause a leak , with resultant fire or explosion . Cylinders must be tied or chained securely at all tanks in an upright position. Valves of cylinders should be turned all when not in use. The protective caps for valves should always be in place when cylinders are being moved or not in use. Protective caps are not designed to be used as lifting devices. This practice is prohibited.  
Oxygen cylinders must be stored separately from acetylene cylinders.
10. Oxygen under pressure forms an explosive mixture with oil. Grease, and other hydrocarbon materials. Regulators, valves, gauges or fittings must not have any oil, grease or lubricant used on them; nor should they be handled with greasy hands or gloves.

## **IX. LOCKOUT AND TAG-OUT PROCEDURE**

### **1. POLICY**

Any equipment which could cause bodily injury by contact with electrically energized parts. By accidental start — up , by release of pressure (air, steam or hydraulic ) or by contact with hydrocarbons or other hazardous materials. Shall be de — energized, de-pressured, purged, rinsed. And drained and properly locked-out and lagged before any work is performed on that equipment.

### **2. GENERAL INFORMATION ON LOCKS**

Each maintenance employee who may need a lock will be issued a unique lock and key and should not exchange locks or give the key to another person. If an employee forgets to remove his/her lock from an electrical disconnect. His/her Supervisor must first attempt to contact the employee to arrange for removal of the lock. If the employee is out of the plant or otherwise

unavailable, a master key for maintenance locks can be obtained from the Safety Manager.

Cutting a lock off an electrical disconnect should be considered only in an emergency.

### **3. ELECTRICAL LOCKOUT PROCEDURES**

Equipment to be worked on must be stopped before any breakers or starters are pulled. Prevent electrical flashovers. They can be fatal.

Notify all affected employees that a lockout or tag-out system is going to be utilized and the reason thereof. The authorizing employee shall know the type and magnitude of energy that the machine or equipment utilizes and shall understand the hazards thereof.

Operate the switch. Valve or other energy isolating device (s) so that the equipment is isolated from its energy source(s). Stored energy must be dissipated or restrained by methods such as repositioning, blocking, bleeding down. Etc.

Lockout and/or tag-out the energy isolating devices with assigned individual locks or tags.

Authorized personnel will be issued lockout devices, tag-outs, and a lock with one key. Only authorized person are promised to install or remove lockout devices or tagout.

After insuring that no personnel are exposed and as a check of having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate.

**CAUTION:** Return operating controls to “ neutral” or “off” position after the test.

The equipment is now locked out or tagged out.

### **4. RESTORING EQUIPMENT TO NORMAL PRODUCTION**

#### **OPERATION**

After the servicing and / or maintenance is complete and equipment is ready for normal production operation. Check the area around the machines or equipment to ensure that no one is exposed.

After all tools have been removed from the machine or equipment guards have been reinstalled and employees are in the clear, remove all lockout or tag-out devices to restore energy to the machine or equipment.



## **X. CONFINED SPACE ENTRY**

### **A DEFINITION**

A confined space is any tank , vessel, tower, heater, reactor, exchanger which:

- a) Must be entered through a manhole or other restricted opening
- b) May have unfavorable natural ventilation.
- c) could contain or produce dangerous air contaminants.
- d) Is not intended for continuous employee occupancy.

### **B POLICY**

An Entry Permit is required before any person enters a confined space. A combustible gas test and an oxygen test are required before a permit is issued.

In addition , any confined space that may contain hydrogen sulfide (H<sub>2</sub>S). sulfur dioxide, carbon monoxide or any other as or vapor may require specific toxic gas tests. If these test indicate dangerous or unhealthy atmospheric , the Entry permit may be denied or restricted as specified by the Safety Department.

Supervisors must sign all Entry Permits issued in their assigned areas and will ensure that other workers in the area are aware of the work being done.

The workers performing the actual “entry” are responsible for following all the precautions listed on the Entry Permits and Entry Tag, as well as all other applicable safety rules. They may also be required to sign the permit.

Contractors will comply with the same rules and will follow the same procedures required of NASHTON personnel in regard to Entry Permits.

### **C ENTRY TAGS**

All entrances to a confined space must be lagged before any entry is considered. If there is no tag or if the entryway is tagged with a “Do Not Enter” tag. No person shall enter the confined space.

Red Tag — A red tag indicates that the confined space may be entered only while wearing supplied air respirators. Other protective equipment such as a lifeline, egress bottle, slicker suites, rubber boots, and gloves may be required as specified on the tag.

Blue Tag — A blue tag indicates that entry can be made without protective equipment (besides hard hat and safety glasses).

Entry tags may be removed only in the presence of and under the direct supervision of the Safety Manager, Plant Manager or Supervisor of Fabrication. All tags must be returned to the Safety Department.

#### **D SAFETY WATCH**

A Safety Watch (Standby person) is required for all confined space entry jobs. (The Safety Watch must be able to speak and understand English.) The Safety Watch shall remain at the man way or entrance to the confined space and shall be in continuous visual contact with workers within the vessel or confined space, whenever practical.

The Safety Watch shall not enter the confined space or leave the man way area unless properly relieved.

If supplied air respirators are in use. The Safety Watch shall be equipped with a self—contained breathing apparatus.

#### **E GAS TESTING CRITERIA**

No Entry Permit shall be issued until a combustible gas and oxygen test are taken.

Appropriate respiratory protective equipment shall be splashed by me Safety Department and required for entry if one or more of following conditions exists:

- a) If any combustible gas is detected.
- b) If the oxygen content is less than 20.0%.
- c) If the hydrogen sulfide concentration exceeds 5 ppm
- d) If the sulfur dioxide concentration exceeds 3 ppm
- e) If the carbon monoxide concentration exceeds 35ppm.
- f) If there is any residual product or other potentially hazardous material in the vessel or confined space.

Gas tests shall be repeated as necessary to ensure the validity of the Entry Permit restrictions.

## **XI. RPESSURE TESTING SAFETY PROCEDURE**

### **A TESTS GENERAL**

Prior to initial operation, installed piping (and maybe vessels) shall be pressure tested to assure tightness and strength. The pressure test shall be maintained for a sufficient time to determine if there are any leaks but not less than ten minutes. Safe practices should be a observed and work shall proceed to an approved procedure by competent personnel. When conducting pressure tests at metal temperatures near the ductile-to- brittle transition temperature of the material, the possibility of brittle fracture shall be considered.

### **B TEST FLUID**

The test shall be hydrostatic using water, except as follows:

If there is a possibility of damage due to freezing or if the operating fluid or piping material would be adversely affected by water. Any other suitable liquid may be used. If a flammable liquid is used, its flash point shall not be less that120° F(50°) and consideration shall be given to the test environment.

If hydrostatic testing is not considered practicable, a pneumatic test in accordance with an approved procedure may be substituted, using a another non — flammable gas.

A preliminary air test at not more than 25 psi (0.17 Mpa) gauge pres may be made prior to hydrostatic test in order to locate major leaks.

Pneumatic testing involves the hazard due to possible release of energy stored in compressed air. Therefore, particular care must be taken to minimize the damage or injury due to failure of any material. The test temperature is important in this regard and must be considered when the choice of material is made in the original design. The pressure shall be increased gradually in steps providing sufficient time for all the piping to equalize strains during test and to check for leaks

### **C SAFETY MEASURES**

1- Notify all affected employees that a pressure test will be utilized and the reason therefore. The authorized employee conducting the test shall know fully the potential hazards associated with the pressure testing procedures.

- 2- Test area must be secured by roping the area off with yellow caution rope and attached signs stating, “CAUTION — HAZARDOUS AREA — DO NOT ENTER”. A distance of 20 feet must be provided between the piping system or vessel being tested and the caution barrier.
- 3- piping designed for vapor or gas shall be provided with additional temporary supports, if necessary, to support the weight of the test liquid.
- 4- Expansion joints shall be provided with temporary restraint, if required, for additional pressure load under test or shall be isolated from the test.
- 5- Equipment, which is not to be subjected to the pressure test. Shall be either disconnected from the piping or isolated by blinds or other means during the test. Valves may be used provided that the valve (including the closure mechanism) is suitable for the proposed test pressure.
- 6- If a pressure test is to be maintained for a period of time and the test liquid in the system is subject to thermal expansion. Precautions shall be taken to avoid excessive pressure.

## **XII. EXCAVATION**

### **A INTRODUCTION**

Ground adjacent to an excavated area cannot be relied upon to support its own weight. Even rock that looks solid from a cursory inspection can collapse without warning. The sides of any type of excavation almost invariably need to be suitably shored or sloped back to the natural angle of repose. To minimize the risk involved with excavation the following factors will be considered before the job starts

- 1- Size, method and purpose of the excavation.
- 2- Nature of the ground including the proximity of any made-up ground.
- 3- Proximity of adjacent structures and the position of underground obstructions such as pipes and cables.
- 4- Weather and moisture conditions.
- 5- Adjacent roads and footpaths and sources of vibrations.

Consideration of the above factors will indicate the safety measures to be taken and whether the sides of the excavation can be sloped back to safe angle or alternatively the necessary

protection required. Adequate and suitable shoring material will be on site for use whenever deep excavation work is to be carried out. Non-deep excavation work may also require shoring. Failure to take this precaution is the root cause of the majority of excavation accidents.

## **B UNDERGROUND OBSTRUCTIONS**

Whenever the presence of underground pipes, cables, vessels, or structures is known or suspected, mechanical excavators will not be used until all such obstructions have been exposed by hand digging. Mechanical excavators will not be used within 5 feet of any such obstruction. Pneumatic breakers will only be used where necessary break concrete or other hard surfaces. An underground service detector will be used to locate any suspected underground pipes and cables.

## **C SAFETY MEASURES**

1- As soon as excavation reaches a depth where men working in it would be buried or trapped if there were a collapse of the sides.

Suitable shoring will be installed or the sides sloped back to a safe angle. Shoring may be of timber or any other suitable material such as steel sheet piling. In accordance with standard industrial practice and with approval of Client's Site Engineer, pipeline trenches in firm ground need not be shored.

2- The determination of the angle of slope or the choice will be based on careful evaluation of pertinent factors such as : depth of cut, possible variations in water content of the material while the excavation is open; anticipated changes in materials from exposures to air. Sun, or water; loading imposed by structures. Equipment, overlying material or stored material ; and vibrations from equipment, blasting and traffic. A competent person before the start of work will inspect every part of any excavation where persons are employed or at least once on every day during which persons are employed there.

- 3- Where vehicles or equipment dump materials into an excavation stop blocks or other suitable means will be provided and used to prevent such vehicles or equipment overrunning the edge.
  - 4- Temporary crossings for personnel over trenches more than 15m deep will be at least 600 mm wide and sufficiently strong with a railing on one side.
  - 5- It might be necessary to obtain an excavation work permit from the client operations or the local authorities while working near or inside existing facilities.
  - 6- All excavations will be backfilled and consolidated, and the surface will be left in good condition as soon as is practicable.
  - 7- Safe means of getting into and out of an excavation will be provided at intervals not to exceed 50 feet (except on pipelines). Where there is a possibility that the excavation may become flooded, intervals will not exceed 25 feet. Ladders will be placed at an angle 75 deg. Extend at least 3 feet above the stepping point, and if more than 10 feet in length, be securely fixed.
  - 8- In a cross-country pipeline, trench access for workers required to enter trench will be provided.
  - 9- Where there is reason to suspect the presence of a hazardous atmosphere in an excavation, a qualified person will carry out tests, and, where necessary, artificial ventilation used or other appropriate precautions taken before men enter
  - 10- Where an internal combustion engine is used in an excavation. Special precautions will be taken to ensure that exhaust gases are discharged so as not to be a hazard to men working in the excavation.
  - 11- Where there is likelihood of persons, vehicles, or equipment falling into an excavation. Suitable barriers will be erected. If men or vehicles are in the vicinity after dark, warning lights will be used to mark the limits of the work.
  - 12- Excavation work in roads, streets, and sidewalks will not be undertaken without the prior approval of authorities.
- Excavation work on public highways will have to be cleared in advance with Government relations and special measures that they might specify are implemented.

### **XIII. RADIOGRAPHY WORK**

#### **A GENERAL**

All activities associated or involved with radioactive material shall be performed in accordance with this procedure.

All exposures will be kept as low as reasonable achievable and will not exceed the limits shown below:

The whole-body dose equivalent will not exceed 50 mSv ( 5 rem) in any one year period.

The average annual dose equivalent will not exceed 5mSc (0.5 rem).

Substances or apparatus that emit ionizing radiation will not be brought on the job site without the written approval of the Client and the local authorities.

#### **B RADIOLOGICAL WORKERS: CLASSIFICATION AND REOUIREMENTS**

1- persons below 18 years of age will not be involved in radio1oical work.

2- Any person who may be exposed to a dose equivalent of 5mSv (0.5 rem) will be classified as radiological worker.

(Typically, this will include radiographers and their helpers.)

3- Any person who may be exposed to radioactive emission levels in excess of 7.5 mSv/h (0.75 mRch/h)

4- Every radiological worker will be fully acquainted with the rules and regulations contained within the radiation section of this document.

5- Every activity requiring the exposure or handling of radio active sources will be performed when two persons are present at least one of these will be trained and qualified to an international acceptable standard for the work in which they are eng.

6- All radiological workers will be medically examined before being employed for that work and re-examined annually.

7- All radiological workers will wear a personal film badge relevant to the type of radiation to which they may be exposed. The ihii badges are to be changed and sent for analysis on a monthly basis and the result of analysis advised to the Safety Department.

8- All radiological workers will wear personal dose meters and a log kept of the reading. If radiation exposure is suspected then the film badge will be sent for analysis as soon as possible.

9- During handling of radiation sources a constant reading radiation meter will be at hand.

### **C SAFETY MEASURES**

1- Any area where radiological work is regularly performed will be walled off and have black and yellow trefoil warning sign posted outside it. Unauthorized personnel shall not be allowed into the area. The maximum radiation levels outside the area will be 2.5 mSv/ (0.25 mReh/h)

2- An area of irregular use of radiological sources, e.g. a plant construction area, will have the work area indicated by checker tape or rope with black and yellow trefoil warning signs. The radiation levels outside this area will be checked with a radiation meter to ensure they do not exceed 7.5 mSv/h (0.75 mRem/h) and all non-classified personnel shall be kept out of this area.

### **D CONTROL AND TRANSPORT OF RADIOACTIVE SOURCES**

1- Radioactive substances will be kept in specially designed containers with proper shielding. Shutters and locks.

2- All radioactive substances and equipment in use or storage on or around a project site will be notified to the Safety Department in writing with the following information:

- a) Type of radiation substance.
- b) Sealed or unsealed sources.
- c) Nuclide (type of substance).
- d) Activity (Becquerel or curie).
- e) Date of receipt.
- f) Storage location.
- g) Date of disposal.
- h) Method of disposal.

Any change of storage location is to be advised to the Safety Department in writing.

3- X-ray equipment will be registered with the Safety Department and the following data to be submitted.

- a) Make and type.



- b) Maximum tube voltage.
- c) Location and usage.

4- Decay charts will be kept for all sources with the classified persons using them.

5- A record will be maintained of the radiation levels emitted from the exterior of containers by having tests performed on the container at least annually for all sources and six monthly on alpha emitting sources with the first reading taken prior to or on receipt on project site. Further recording will be taken if the source is damaged.

6- Inspection measurements will also be performed on x-ray equipment at least annually.

7- A daily log will be maintained for each source to show use:

- a) Time out of storage.
- b) Area of use.
- c) Time returned to storage.
- d) Name (s) of user.

8- Source substances will only be transported in properly designed transport containers. Which do not emit more than 0.1 mSv/h at 1m from the source.

9- Any loss of a radioactive source will be reported to the local authority controlling it and the Safety Department.

10- Personnel will not travel in the same compartment of a vehicle as a radioactive source.

11- All radioactive sources being transported will be secured such that they cannot be damaged or lost in transit.

12- All vehicles transporting radioactive sources will:

- a) Display yellow and black trefoil signs on the entry to the compartment containing the source and at the front and rear of the vehicles.
- b) Display a fire proof warning notice front and rear stating the contact and telephone number of the relevant authority controlling it.
- c) Carry a portable halon type fire extinguisher.
- d) When sources are not in an approved storage pit they will not be left unattended.

13- Transport of radioactive substances will be done by a classified radiological worker who will be wearing his film badge and personal dosimeter whilst doing so.

### **E STORAGE OF SOURCES**

1- Radioactive substances will be stored in locked underground pit from which the radiation level will not exceed 2.5 mSv/h (0.26 mRem/h)

2- The storage pit will be located inside a securely fenced area with a locked gate away from building and road ways:

a) The emission level outside this fence will not exceed 1mSv/h (0.1 mRemlh)

b) The fence will be at least 3m from the pit edge.

3- Yellow and black trefoil warning signs will be displayed on all side of the fenced area.

4- Sources will be put into or removed from the pit by classified radiological workers.

5- X-ray equipment will not be left unattended if in an operable condition and the x-ray room or equipment will be kept when not in use.

### **F EMERGENCY PROCEDURES**

1- If a person is suspected of receiving a dose above the allowable limits of Section A then the Safety Department . shall be informed immediately

2- Provisions will be made to return sources to a sealed container in the event of any emergency.

### **G WASTE HANDLING AND DISPOSAL**

I. sealed sources ill be disposed of by returning to the supplier or an approved international radioactive waste disposal agency as agreed with the Safety Department and as required by the local authorities.

2. Waste is considered radioactive as long s its activity is higher than 100 Bq (2nCi) per gram.

## **XIV. CONSTRUCTION EQUIPMENT, LIFTING GEARAND CRANES**

### **A CONSTRUCTION EQUIPMENT**

1- The use of construction equipment can lead to many situations that are potentially hazardous. The safe way of using construction equipment is to have properly trained operators

working with well maintained equipment carrying out the work for which it was designed with the help of the manufacturer's instructions and operating manuals.

2- Operators of mobile equipment will be in possession of a license or the particular class of machinery applicable to the country in which the project is taking place.

3- All equipment operators will be trained. Tested and issued with written authorization specifying the equipment that they are competent to operate.

4- All moving machinery will be guarded. in particular pulleys, Veebelt drives, fans , and revolving shafts all of which are present on most of the static equipment used on or around construction sites. Guards will be installed on equipment prior to its arrival on site.

5- Maintenance and inspection schedules will be established for each piece of equipment and strictly followed, including safety checks e.g. limit switches. Gages. Guards and fire extinguishers.

6- When machines are left unattended. Engines will be stopped and parking brakes applied or the wheels chocked. Blades, buckets and other hydraulic attachments will be lowered to the ground before the operator leaves the machine.

7- The operator should walk and look around his machine to see if the area is clear before he starts it and should never leave it unattended while running nor leave the key in the ignition switch.

He should not carry passengers with him if this is not provided for in the equipment.

8- Cabs fitted to equipment will give maximum all round visibility. Cabs will be kept clean and clear of rubbish. Loose tools . etc. windows will be kept clean at all times.

9- Where the operator of a machine during operation cannot see the area all around his machine, an attendant will be in a position to direct and assist the operator.

10-Gasoline drive equipment will not be used inside a building or other confined space.

## **B CRANE**

1- Due to its nature of work, crane operation involves a higher degree of risk and constitutes a bigger safety hazard than equipment if not carried out properly and as such crane operators and riggers should be carefully selected.

- 2- The operator will be in possession of a current Crane Operator's License applicable to the country in which the project is located conversant with the type of crane he will operate. His competence must be beyond doubt as judged after tests Superintendent.
  - 3- The operator will not engage in any practice that will divert his attention while operating the crane, nor operate the crane if he feels physically unfit.
  - 4- When handling loads, the operator will not start crane movement until load is within his range of vision.
  - 5- The crane operator will respond to operating signals only from the appointed rigger. He will obey an emergency stop signal at any time.
  - 6- The crane operator is in command of all crane handling operations and is primarily responsible that the crane operations are carried out in a safe manner. The crane operator will have the authority to stop and refuse to handle loads until safe conditions have been reestablished.
  - 7- Each day before the crane is put into use the operator will ensure that all safety devices are set and operating correctly and that the wire ropes are in approved working condition.
  - 8- Cranes will not be used if any limit switches or other safety equipment are out of order.
  - 9- A crane will only be used for vertical lowering and lifting of loads.
  - 10- The operator of a crane will not leave the operating seat when load is hanging on the hook.
  - 11- A suitable container or basket will be used for mass transportation of loose material so that no material is likely to fall during operation.
  - 12- The slinger/rigger is responsible for properly attaching the load to the crane and giving the correct hand signals to the crane operator. Correct slinging practices should be followed at all times.
- All repairs and maintenance work on cranes shall be carried out by competent technicians in accordance with the Manufacturer's recommendations. Proper records of major repairs shall be maintained. Welding on the boom sections or any critical structural member shall be done under the supervision of a welding inspector, to be followed by a proof test.
- At least once every period of 12 months, each crane will be subjected to an independent

survey.

This survey consists of:

- 1- A thorough examination.
- 2- A load test.

A copy of a test certificate will be requested and kept on file by the Rigging Superintendent and the Safety Department

### **C LIFTING GEAR**

Riggers handling lifting gear shall

- 1- Carefully assess the weight of the load.
- 2- Work out which are the correct suspension points in order for the load to be correctly balanced.
- 3- Check the efficiency of the ropes and chains and straps.
- 4- Use the correct equipment for the job making the slings in the correct way.
- 5- Check the maximum safe working load of the slings and shackles on the chart.
- 6- Protect the safety of others by keeping them away from, and preventing them from crossing the area where work is in progress.
- 7- Clearly indicate the maneuvers to be carried out to the crane operator.
- 8- A color coding system will be adopted for all lifting equipment to identify the operation / inspection schedule. Color boards will be located at all working areas so that users may be instantly aware of the inspection validity period of each item of lifting equipment.
- 9- A register of all lifting equipment will be kept and regularly updated.
- 10- Frequent inspections will be made of all lifting equipment and if there are any doubts as to the safety of this equipment it will not be used.

## **XV. SITE STORAGE AND HANDLING OF GAS CYLINDERS**

### **A GENERAL**

1- The gases contained in cylinders are identified by the color or combination of color painted on the cylinders. Charts showing the appropriate color codes will be on display for reference by users.

2- All gas cylinders received will be examined for damage and correct color-coding. Cylinders, which are not in good condition, will be returned to the supplier immediately.

3- Gas cylinders will be handled with care, they will not be dropped.

Thrown about, or left in positions where they may be subject to damage, and should not be subjected to temperatures over 54.0 C or to a direct contact with a flame. left in positions where they may be subject to damage, and should not be subjected to temperatures over 54.0 C or to a direct contact with a flame.

4- Cylinder will be prevented from movement during transportation. Cylinders will not project over the end or sides of the vehicle. The vehicle's tailgate will be closed and fastened. Valve caps will be fitted when cylinders are not in use.

5- Cylinder will be stored in a well ventilated area protected from the direct sun rays by a sun shield. Cylinders containing flammable gases will not be stored with cylinders containing oxygen.

6- Only standard keys will be used to open the valve. All valves will be cracked (vented) gently before use.

7- Repairs or adjustments will not be made to gas cylinders other than the normal regulation of the valve.

8- Cylinder valves will be closed at all times except when gas is being used.

9- Cylinders will not be placed where they might become part of an electrical circuit. If cylinders are used in conjunction with electric welding, precautions will be taken against grounding the cylinders and allowing them to be burned. Electric welding are.

10- Threads on regulators will be the same as on the cylinder valve outlet. Force will not be used on connections that do not fit.

11- Regulators, gauges, hoses, etc. provided for use with particular gas will not be used on cylinders containing gases with different properties.

12- Before a regulator is removed from a cylinder. The cylinder valve will be closed and all pressure released from the regulator.

13- Ignition sources will be kept away from cylinders. A flame will never be used to detect leaks. Soapy water can be used to detect flammable gas leaks.

14- Gas cylinders will not be used as rollers. Supports. Or for any purpose other than to carry gas.

15- Cylinders will never be dropped from a height or subject to mechanical shock, acetylene cylinders should always be kept in the vertical position.

## **B LPG PROPERTIES AND HAZARDS**

As the name implies, LPG or “Liquefied Petroleum Gas” is petroleum-derived gas, which is compressed into a liquid and stored and handled as a liquid under pressure. It is commonly called “LP-Gas” LPG is odorless and colorless in its natural form. It is difficult to detect unless an odorizing agent has been added.

The boiling of LPG materials are well below usual ambient Temperatures. A LPG product. When released to atmospheric pressure. Well quickly boil or “flash” into vapor and can create a flammable atmosphere over a large area. For example, one gallon of butane vaporized and mixed with air in proportions corresponding to the lower flammable limit will create a flammable atmosphere in a three feet (3) layer over an area twenty-five feet (25) in diameter. LPG gases are not considered toxic. The are a simple asphyxiant in that they can dilute the oxygen content of air to levels insufficient for breathing

## **XVI. HAZARD COMMUNICATION PROGRAM**

### **A PURPOSE**

The following written Hazard Communication Program has been established for the different workshops at NASHTON to ensure that all employees of these shops have been educated and trained on potential hazards within that area. The program will be available in the Safety Manager's office and the respective workshop supervisor's office for review by all employees.

### **B CONTAINER LABELING**

The work shop supervisor will verify that all containers received for use by his shop will:

- 1- Be clearly labeled as to the contents.
- 2- Note the appropriate hazard warnings.
- 3- List the name and the address of the manufacturer.

No container will be released for use until the above data is verified.

### **C MATERIAL SAFETY DATA SHEETS**

Copies of MSD's for all hazardous chemicals to which the work shop employees may be exposed will be kept in the Supervisor's office and the Safety Manager's office.

MSDS's will be available for review to all employees during each work shift. Copies will be available upon request to the Supervisor.

### **D EMPLOYEE TRAINING AND INFORMATION**

Before starting work. Each new employee will attend a safety orientation and be given a copy of NASHTON Hazard Communication program that will contain the following information:

- 1- Chemicals and their hazards in the work area.
- 2- How to lessen or prevent exposure to the hazardous
- 3- What NASHTON Company has done to lessen or prevent worker's exposure to the chemicals.
- 4- Procedures to follow if they are exposed to the chemicals.

After attending the orientation. Each employee will sign a form stating that he/she received the written material outlined above and received the safety training

Before any new hazardous chemical is introduced into any of the workshops. Each employee



will be given information in the snake manner as during a safety orientation. The workshop supervisor will be responsible for seeing the MSD's on the new chemical are available. Weekly safety meetings will be held and hazardous materials used in the project will be discussed . attendance is mandatory for all Supervisors and foremen who will be responsible for passing the information to employees in their section.

Notices will be posted on the employee bulletin board that prove an explanation of our container labeling system and location of the written Hazard Communication Program.

### **E LIST HAZARDOUS CHEMICALS**

Attached is a list of hazardous chemicals used in the different workshops. Further information on each hazardous chemical noted can be obtained by reviewing Material safety Date Sheets in the Safety Manager's office and the notice board in the workshop supervisor's office.

### **F EMPLOYEE ORIENTATION OF OSHA'S COMMUNICATION STANDARD, 29 CER 1910.2100. RIGHT - TO - KNOW"**

#### **1- Introduction.**

Many types of job-related hazards are present with any position. In accordance with OSI-IA's Communication Standard 29 CFR 1910.2100 or the "Right -To-Know" legislation BHTC will inform each employee of the occupational hazards which might exist in different areas of the plant faculties and job sites.

#### **2- General Hazards**

Each working environment experience the "every-day hazards" such as tripping . falling down, minor cuts and bruises. Carelessness. Etc. These hazards are always present in all areas of the plant facilities and work sites and can become serious if overlooked.

#### **3- Main and Structural Shops**

The majority of accidents occur in the Main Shop and the Structural Shop . The fabrication and welding of vessels. Pipe. Platforms, and skids are performed in this area.

- a) In the process of fabrication and welding, one of the main hazards is hear burns due to cutting with an oxygen/acetylene torch as well as welding. This produces extremely high heat capable of causing severe burns.
- b) During the fabrication and welding processes, large amount s of grinding are required causing small metal particles to be constantly thrown into the air. These particles can get in the eye and cause irritation or become lodged in the eye which requires a doctor’s assistance for removal.

#### 4- **Electrical Shop**

- a) The most obvious hazard in this area is dealing with electricity. Resulting in bums and electrical shock to the employee.
- b) An employee in the Electrical Shop will handle heavy equipment at various times. Precautions should be taken when lifting heavy equipment to prevent back and muscle injuries.

#### 5- **Maintenance Shop**

The Maintenance Shop performs maintenance work on equipment located through the plant facilities.

#### 6- **Conclusion**

NASHTON encourages each employee to exercise caution on an “every — day” basis and particularly around known hazards. has been established to handle any unsafe actions being performed and to prevent future accidents.

## **XVII. MODIFICATIONS AND REPAIRS OF PIPING SYSTEMS AND PIPELINES**

### **A GENERAL**

Work on existing piping systems or pressure vessels of a petroleum facility whether it is for maintenance purposes, tie-ins or hot taps involves a high extent of risk related to the presence of highly flammable and toxic hydrocarbons. Work shall proceed in accordance with agreed procedures after obtaining the necessary work permits.

### **B DRAINING AND VENTING**

1- Before an oil line is isolated for repair or maintenance it is essential that it is completely drained. Lines will be depressurized to a vessel and then drained as far as possible through fitted drain points. Facilities will be provided for controlling the release and containing any oil spillage. The utmost care will be taken to limit the release of flammable or toxic vapors to the atmosphere and this operation will be adequately supervised. The area downwind of the release, which is likely to include a combustible atmosphere, will be cleared of all sources of ignition. Personnel working downwind will receive adequate warning if there is a possibility of an escape of toxic or combustible gas

2- Pipelines containing gas will be depressurized to atmosphere, as far as possible through process far systems. Gas may only be vented directly to atmosphere when it is absolutely necessary and then only., under strictly controlled conditions.

The areas will be adequately fenced off and warning notices posted warning of the possibility of toxic or flammable atmospheres being present. A fireguard will standby while the joints are being broken and will remain on site until gas tests prove that all has dispersed. All work and vessel or vehicle movements in the area will be strictly controlled. Persons engaged in engineering work at the site will wear self-contained or air line-breathing apparatus. (NOT CANISTER TYPE)

3- When lines containing corrosive or toxic chemicals are to be entered. Provisions will be made for draining the line content a suitable container or drain. Neutralization and water

dilution may be necessary and advice will sought from the Project Safety Manager. Adequate protective clothing and/or equipment will be worn.

### **C LINE ISOLATION AND CLEARANCE**

One or a combination of the following methods may effect isolation of lines containing hydrocarbons or chemicals:

1- By removing a valve or spool piece and by sealing off the live sections with a standard blind flange.

2- By inserting approved-spade between mating flanges.

Every effort will be made to remove the contents from the line. And the likelihood of oil still remaining in the lines will be assumed especially if the line is buried and/or has a long run and particularly in natural traps oil or gas, e.g. Loops, by-passes, drain point and changes in elevation.

Methods of removing oil from the line will depend upon the shape of the line and the type of hydrocarbon. It varies from job to job. Work shall only proceed according to the agreed procedure.

### **D REPAIRS AND MODIFICATIONS**

#### **1- HOT TAPPING TECHNIQUES**

The term “hot tapping” refers to a method of making a connection into a pipeline, vessel or tank while in service. All hot tap work shall be in accordance with the work procedure shown in Appendix V (General Guidance) specific methods are to be agreed with the Clients.

#### **2- CUTTING OF PIPELINES**

a) Cold cutting techniques will be used of full bore access is required into pipelines which have contained flammable materials. Cold cutting will be carried out using properly designed and manufactured mechanical air-operated or manual pipe cutters. During the cutting operation generated and suitable lubricants and coolants will be us to dissipate this heat.

b) Abrasive wheel cutters will not be used in such cases. As there is a risk externally of low energy sparks which could ignite carbonaceous material, but there is greater risk internally to

the line as the cutter penetrates the wall. The internal wall of the pipe becomes very hot and high energy sparks are projected into the pipe. Heavy oil residues may be vaporized by the heat and ignited by the sparks. A further hazard is the tendency of these brittle cutting wheels to scatter if improperly used.

### **E WORK ON PIPELINES WHICH CANNOT BE GAS FREED**

a) The application of heat, by welding, to any part of line that has not been gas freed is potentially very dangerous.

Therefore whenever such mechanical work is required on pipelines the procedure and cautionary instructions given in these regulations must be adopted to ensure that all work is carried out and completed under the safest possible conditions.

b) Preparatory Arrangements

(i) The operating and performing authorities or their deputies will visit the site and discuss the method it must also be determined whether the work can be completed by removal to offsite facilities for hot work or cold work techniques on site. If the aforementioned methods are not practicable hot work may be permitted with the use of mechanical seal plugs but only after authorization from the Project Manager.

(ii) Having agreed on a work program the necessary work permits will be prepared before work can be started.

(iii) For hot work on site. Only approved plugs will used.

(iv) If mechanical seal plugs are involved in the work this will be indicated in the work permit and also if hammering and movement of the pipe will take place.

(v) Considerable effort can be required to remove plugs from the line and a spark can be produced due to the "Thermite" reaction if the body of the plug is made of aluminum. The inside of the pipe will therefore be wetted before the plug is removed.

(vi) Since mechanical plugs are not designed to hold pressure, a secondary atmosphere vent, preferably of full line diameter will always be provided on the system.

## **F SAFETY MEASURES**

- (i) Sewers, drains, etc.. within (15m) 50 feet of the work Site will be covered with sheeting and (7.5 cm) 3 inches of sand or earth placed on top. The sand or earth will be kept wet during the operation.
- (ii) All combustible materials will be removed off-site and the ground should be oil free and unsaturated.
- (iii) If it is necessary to excavate in order to expose a pipe for cutting. The safety factors concerning vapor in a pit will be considered.
- (iv) Adequate fire protection will be on site and positioned correctly and a fireguard standing-by.
- (v) Suitable welding equipment will be on site and positioned correctly.
- (vi) The wind direction and any source of ignition will be considered before cutting the line. In addition provisions will be made to contain , control or disperse any spills that might occur upon cutting the line. Oil-soaked sand will be removed and covered with a blanket of clean sand chemical of foam to eliminate any fire hazard.
- (vii) All persons involved in the work will wear the proper protective clothing.
- (viii) If an oil spillage is expected in any work prior to hot work , the facilities to contain, control and remove such a spillage will be on site.
- (ix) Work will then proceed according to the written procedure agreed upon which will address:
  - 1. Method of cutting.
  - 2. Pipe preparation for welding.
  - 3. Use of plugs.

## **XVIII. OCCUPATIONAL HEALTH POLICY**

### **A STATEMENT**

NASHTON is committed to the continuous improvement of its working conditions and towards educating its employees about the potential health hazards in the operations and projects they are involved in and the means to minimize or eliminate these.

As addressed in the hazard communication program section of this manual occupational illnesses might be developed during some operations if necessary precautions have not been taken. The following section briefly describes these.

### **B HEALTH HAZARDOUS TASKS**

#### **1- PAINT SHOP**

Employees are exposed to toxic vapors or spray mist which will cause respiratory problems. To avoid this employees should wear an appropriate properly fitted respirator until vapors and mists are exhausted unless air monitoring demonstrates vapor and mist levels are below applicable limits. Use approved chemical/mechanical filter designed to remove a combination of particles and vapors. Local exhaust ventilation system shall be used at all times during the spray painting process to keep the air contaminate concentration below the lower explosion limit and below current applicable exposure limits.

#### **2- FABRICATION AND WELDING SHOP**

Respiratory ailments might result due to inhalation of fumes emitted during the welding process. Eye injuries and burns might result from the welding are lights and from foreign bodies during the grinding process. Proper eye protective glasses should be worn at all times. Exposure to high radiation doses might take place during radiography work if safety measures are not taken.

#### **3- DESERT FIELD LOCATIONS**

Exposure to sunstroke's, heat exhaustion, and respiratory ailments due to dust inhalation during sand storms or earth-moving operations might occur. Employees should use filter type dust masks

during these conditions but should use filter type dust masks during these conditions but should stop the work if these conditions get worse.

### **C HYGIENE STANDARDS AT FIELD LOCATIONS**

Camps, offices and workshops installed at remote locations during project execution should maintain a high level of hygiene for the following facilities:

- 1- Kitchens, and dining halls.
- 2- Potable water storage and distribution system.
- 3- Recreational facilities.

Proper toilet and labor ablution facilities along with adequate sewage system shall be provided.

### **D TRAINING**

Management and supervisory staff shall be trained on how to deal with unhealthy site conditions as referred to in “B” above and on how to treat first aid cases.

All employees will be educated by their respective supervisors during the single concept safety meetings about the health hazards related to their tasks.

### **E INSPECTION AND AUDITS**

The Project Medical Doctor (when available) and the Safety Manager will conduct a monthly inspection tour covering the project:

- 1- Camps.
- 2- Workshops.
- 3- Offices.
- 4- Any other site locations.

To determine deficiencies on the Health and Hygiene Standard, work conditions and practices, to be followed by submitting a report to the superintendent of Project Manager on their findings including their recommendations for the necessary improvements.

The Superintendent or Project Manager and other members from the main office management will conduct random health audits to the project facilities and will document findings and necessary taken.



## **XIX. ENVIRONMENTAL PROTECTION POLICY**

### **A STATEMENT**

NASHTON will use its best efforts to prevent and take all reasonable precautions to avoid pollution or contamination of the land or water arising out of its performance of the work. Should there be discharge or escape of any appreciable quantity of pollutants or contaminants during the performance of the work, NASHTON will immediately notify the Client so that necessary actions and measures are taken to contain. Control, recover or disperse the substance.

### **B ACTIONS TO BE TAKEN IN THE EVENT OF AN INCIDENT CAUSING OR LIKELY TO CAUSE POLLUTION**

#### **1- KEY INDIVIDUALS**

The following personnel will take action as detailed.

- a) Incident Observer/Reporter.
- b) Safety Manager.
- c) Construction Manager or Supervisor.

#### **2- INCIDENT OBSERVIERJREPORTER**

Any person discovering a pollution incident/oil spill will immediately raise an alarm and advise the Safety Manager providing the following information.

- a) Location of incident.
- b) Nature of spill.
- c) Extent of spill.

Areas likely to be affected (watercourses, etc)

1-laying raised the alarm an attempt will then be made to stop or minimize the spill at source using the equipment stored on job site and to prevent further progress of the spill.

The Safety Manager will be available at all times (including a replacement) and will establish an all time office location and telephone number on site.

3- **SAFETY MANAGER WILL:**

on receipt of pollution incident notification:

- a) Register call and accurately record all relevant details.
- b) Notify the following personnel immediately.
- c) Construction Manager/Supervisor.
- d) Project Engineer/Project manger

4- **THE SAFETY MANAGER WILL:**

- a) ensure that a clean-up/recovery operation is mobilized.
- b) Supervise cleaning-up operation.
- c) Act as point contact.

5- **THE CONSTRUCTION MANAGERJSUPERVISOR WILL:**

- a) Notify the Site Superintendent.
- b) Initiate contact to other parties as necessary.
- c) Notify Client's Safety Department.
- d) Inform concerned parties of the severity of the incident.
- e) Organize emergency response, if any.

**C CLEAN-UP PROCEDURE**

As this depends on the type and extent of pollution involved, NASHTON will prepare and implement a clean-up procedure with the help of specialized companies of need to. This procedure shall be agreed upon with the Client and local authorities.

## **XX. EMERGENCY PROCEDURE**

### **A PURPOSE**

To establish procedures to be followed in the event of an emergency incident occurring on the project job site and to define action to be followed by all NASHTON personnel in the event of an emergency incident who shall be aware of this procedure

### **B DEFINITION**

Emergency Incident shall be any accident, fire, or situation which endangers or is capable of endangering human life or property.

### **C PROCEDURE**

In the event of an accident, fire or other emergency, the following action is to be taken:

#### **1- ACCIDENT**

a) Superintendent/Foreman/Supervisor to take control. Render first aid, **DO NOT MOVE INJURED PERSON** unless he is in further danger.

If electrical power is involved, **DO NOT TOUCH INJURED PERSON**. Switch off or arrange to have power switched off before attempting to touch or remove patient.

b) Detail someone to call for medical assistance. Where site emergency medical facilities are available, the call out procedure must be posted at work sites and all employees made familiar with these facilities are available, the call out procedure must be posted at work sites and all employees made familiar with these facilities. If such on site facilities are not available, emergency medical assistance will be provided by the nearest outside medical center. in either case . the following is to be communicated:

- (i) Location of accident.
- (ii) Number of injured persons.
- (iii) Any further, relevant information

Where required, arrangements should be made to direct emergency vehicles to the accident location.

- c) Inform the Project Safety Manager and the Client Safety Representative of accident.
- d) Secure the area leaving all equipment, materials or tools in position. This will assist in any subsequent investigation.

## 2- **FIRE AND OTHER EMERGENCIES**

- a) Raise the alarm by calling/information nearest fire department stating:
  - (i) Type of incident.
  - (ii) Location.
  - (iii) Any further relevant information.
- b) Attempt to extinguish the fire using available fire fighting equipment. Do not risk injury or endanger life in this operation.
- c) Provide information/assistance to the emergency control center as and when required. Follow instructions to evacuate building or areas as per evacuation procedures provided by the safety department.

## D **EMERGENCY TELEPHONE NUMBERS**

The telephone number of the:

- 1- Nearest medical facility.
- 2- Nearest fire department.
- 3- Emergency Control Center (when available : Telephone operator control room. Etc.)

Shall be posted on sign boards around the different site locations and offices and in the different language of the site personnel

## **XXI. SAFETY RULES AND REGULATIONS**

### **A PURPOSE**

To define the job site disciplinary rules as applicable to NASHTON and its subcontractor personnel and the procedure to be followed in the event of a violation. A violation shall mean any act, omission, operation or condition that contravenes any of the listed disciplinary rules (see attachments).

### **B RESPONSIBILITIES**

Superintendent, Safety/Training Manager, Engineers, Supervisors and subcontractors are to ensure that all employees are fully conversant with site safety and security rules and regulations and that failure to comply with these will result in disciplinary action

### **C PROCEDURE**

1- Reported violations of job site disciplinary rules may be originated by any of the site senior staff members.

When the originator is the Client the report will be directed to the Superintendent and/or Safety/Training Manager.

2- The Superintendent and / or Safety/Training manager will then carry out any investigation and/or implement the required disciplinary action in any reported violation of the rules by his employee.

The manager will forward a copy of all warning letters/action taken to:

- a) The originator of the violation report.
- b) Safety Manager.
- c) Personnel Department

### **D REFERENCES**

The job site "Safety Rules-Table of Penalties". A copy of which will be displayed on all contractor

notice boards.

Note: The Safety rules and penalties are not intended to be a complete listing of all safety rules.

<b>JOB SITE SAFFTY RULES</b>						
<b>TABLE OF PENALTIES</b>						
<b>DICCIPLINE LEVEL NO .1</b>			<b>DEGREE OF PENALTY</b>			
<b>ITEM NO</b>	<b>NATURE OF OFFENSE</b>	<b>FIRST TIME</b>	<b>SECON D TIME</b>	<b>THIRD TIME</b>	<b>FOURTH TIME</b>	<b>REMARKS</b>
1	Not wearing hard hats on the job	Written warning	Written warning	Suspension of Yearly Salary increase of any Promotion	Termination	
2	Not wearing safety footwear on the job		-	-	-	
3	Not throwing trash in designated containers	-	-	-	-	
4	Not wearing proper clothing on job	-	-	-	-	

5	Failure to wear I.D badge at all times		-	-			
<b>JOB SITE SAFFTY RULES</b>							
<b>TABLE OF PENALTIES</b>							
<b>DICCIPLINE LEVEL NO .2</b>				<b>DEGREE OF PENALTY</b>			
<b>ITEM NO</b>	<b>NATURE OF OFFENSE</b>	<b>FIR S T TIME</b>	<b>SECOND TIME</b>	<b>THIRD TIME</b>	<b>FOURTH TIME</b>	<b>REMA RKS</b>	
1	Note abiding by Client Security Procedures or refusal t cooperate with Client Security	Written warning	Written warning	Suspension of Yearly Salary increase of any Promotion	Termination		
2	Note holding a valid operator `s license while operating a vehicle on the site		-	-	-		
3	Not Co- operating with designated authorities conducting a safety audit or investigation	-	-	-	-		
4	Not reporting to the proper authority an accident that causes personal injury or property damages	-	-	-	-		

5	Employees going into exiting facilities and operating area if work does not require them		-	-		
6	Violation of site traffic regulation and speed limits					
7	Sleeping on the job during working hours					

**JOB SITE SAFETY RULES**

**TABLE OF PENALTIES**

<b>ITEM NO</b>	<b>NATURE OF OFFENSE</b>	<b>FIRST TIME</b>	<b>SECOND TIME</b>	<b>THIRD TIME</b>	<b>REMARKS</b>
1	Fighting on the site at any time	Written .warning	Written warning	Termination	
2	Using or possessing any illegal drugs or alcoholic	-	-	-	
3	Working under the influence of alcoholic beverages or illegal drugs	-	-	-	-
4	Entering or leaving the site other than through designated gates	-	-	-	—
5	Intentionally destroying or damaging NASHTON or Client's property	-	-	-	
6	Violating the equipment safety lock out or tagging procedures	-	-	-	—
	Not wearing proper safety				—



	protection while welding				
8	Operating a piece of equipment without proper operator's permit	-	-	-	—
9	Operating a piece of equipment with our proper praetor's permit	-	-	-	—

**APPENDIX I**

**SAFETY PROCEDURE**

**FOR**

**HOT TAPS**

## **TYPICAL SAFETY PROCEDURE TO BE USED IN SPLIT TEE WELDING AND HOT TAP**

### **I. GENERAL**

A- Before any work is started, the procedures should be discussed with the operations department of the Client.

B- All person involved must be instructed in what actions must be taken should any incident occur. Supervisor to be at work site continuously until completion.

C- A permit to work must be obtained from the operations control room before work commences. It must be at work site while work is being carried out and 2 vehicles with mobile telephones or radios to be parked adjacent to work area. Contact to be made with operations control room before work commences and on completion.

### **II. FIRE EQUIPMENT**

A- 5 x 9 kg dry powder extinguishers to be present before work commences.

B- A firewatcher, trained in use of this first aid fist aid flue equipment J: will be present at all times.

Other present in group will also be

instructed Safety Engineer will check equipment prior to work commencing

### **III. SAFETY CLOTHING AND EQUIPMENT**

A- All persons will comply with NASHTON's safety instructions regarding the wearing of booth, helmets and eye/face protection.

B- All equipment will be checked thoroughly before work commences Any defective equipment will be removed.

C- All tools and safety equipment required for the work to be checked/present prior to work commencing.

When all the above are carried out, work should start.

#### **On Completion of work**

A- All tools and equipment to be gathered and removed.

B- A good clean up of the area to be carried out.

C- Work permit sections to be completed and permit Required safety equipment on site are:

D- Operations, control room to be informed that work is completed and checked for leaks.

#### **IV. WELDING AND HOT TAPS**

##### **A WORK PERMIT**

A daily work permit shall be obtained duly authorized by the Client

##### **1. COMMUNICATION**

Each morning before work commences the Client's site Engineer shall establish communication with the production supervisor at the control room. Information to be given before work can start:

- a. Location of operation.
- b. Location of emergency equipment.
- c. Type of work: Welding (longitudinal/fillet) or hot tap.
- d. Maximum allowed line pressure.

##### **2. PRESSURE REDUCTIONS**

When a pressure reduction is required the Client's Engineer will contact the production supervisor. Welding or hot tap only to commence after confirmation from production that pressure has been reduced to correct level. Client's Site engineer to confirm to production to normal operating pressure. All safety precautions to be maintained until latter reached.

##### **3. PRODUCTION DEPARTMENT**

Production department shall be responsible for ensuring that production personnel are on communication standby throughout welding and hot tap operations to carry out any emergency shutdown or isolation work.

## **B SAFETY**

NASHTON safety Manager should ensure that all emergency equipment is on site,

Required safety equipment on site are :

1. 5 each dry powder fire extinguishers.
2. 2 each insulation blankets.
3. 1 each gas detector.
4. 2 each 40 MHz car fitted radios or mobile telephones.
5. 2 each first aid kits (Contractor supply).

The Safety Manager will be present during welding and hot tap operation.

NASHTON's responsible supervisor should satisfy himself that all the conditions of the work permit are adhered to. Good communication channels are of vital importance and should be checked with all personnel no communication standby. Personnel working in a trench during welding and hot tap operations shall have a harness with a safety line. One fire guard shall be present.

## **C. LEAK**

In the event of a leak the following actions should be taken immediately:

1. Client's Engineer to inform control room and stop all operations.
2. Production department will shut down pump system and isolate line.
3. Block valves along the line will only be closed on production department request.
4. The Client to assess leak/rupture and report to emergency control center for further instructions

## **D. WELDING**

All work to be done in presence of Client's Engineer/Inspector in accordance with approved welding procedure.

### **1. PRESSURE REDUCTIONS**

Pressure reductions may be required for welding on crude line. Client's Site Engineer to confirm and advise NASHTON's Site supervisor.

**2. NDT**

welds to be visually inspected. Fillet welds to ultrasonic tested and M. P .1 tested.

**3. TESTING**

A leak test of split tee is to be carried out with air and soap at maximum 700 kpa.

**E. HOT TAP**

All work to be done in presence of Client's Engineer/Inspector.

NASHTON's Safety Manager to be on site during hot tap operation.

Hot taps are to be carried out by specialized technicians.

**1. PRESSURE REDUCTIONS**

Maximum allowable pressure for hot-tapping machine to be advised by nominated vendor.

**2. PROCEDURES**

**Hot** taps will be carried out in accordance with the following procedure.

- a. Install tapping valve.
- b. Install T.M. adaptor to tapping machine.
- c. Assemble holder, cutter and pilot drill.
- d. Attach cutter holder to boring bar.
- e. Take measurements.
- f. Close valve.
- g. Install tapping machine on valve.
- h. Carry out a tightness test.
- i. Open valve.
- j. Extend boring bar.
- k. Extend boring bar.
- l. Attach power unit hoses.
- m. Engage automatic feed.
- n. Complete tap.

- o. Retract cutter.
- p. Close valve.
- q. Open bleeder valve.
- r. Recover tapping equipment
- s. Remove coupon.
- t. Install flow through plugs

**F. COMPLETION**

A work permit has to be obtained from Client’s Site Engineer.

Split tee to be coated, line to be back filled and area reinstated to

**G. PROGRAM**

Excavation and location of suitable areas for hot taps to be carried out well ahead of welding and hot tap operations.

**11. IMPORTANT TELEPHONE NUMBERS/RADIO CALL SIGNS PRODUCTION**

**DEPARTMENT**

Control Room	-----
Production Supervisor	-----
Emergency (Client)	-----
Client’s Engineer	-----
<b>NASHTON COMPANY</b>	
Superintendent	-----
Site supervisor	-----
Safety Manger	-----
Emergency Number	-----

**APPENDIX II**

**H<sub>2</sub>S SAFETY**  
**AND**  
**TRAINING COURSE**



## H2S SAFETY AND TRAINING COURSE

### I. PROPERTIES OF H2

Color	colorless
Odor ( up to 100 ppm)	very offensive. Commonly referred to as odor of rotten eggs.
Vapor Density	1.189 (Air — 1.0 ) HS is heavier than air
Boiling Point	- 76° F
Explosive Limits	4.3to46 percent by volume in air
Ignition Temperature	500° F
Water Soluble	Yes (4 volumes gas in 1 volume water @ 32° F)
Flammability	Forms explosive mixtures
Corrosiveness	with air or oxygen Dry-not corrosive to ordinary metals. Wet corrosive to most common metals

Effect on Humans

Irritates eyes, throat, and upper respiratory system

**II. TOXIC EFFECTS OF HYDROGEN SULFIDE**

CONCENTRATION: \_\_\_\_\_

:

% H <sub>2</sub> S	PPM	GRJ100 SCF	EFFECT
0.001	10	.65	Obvious and unpleasant odor Beginning eye irritation. Permissible exposure limit for Eight ( 8 ) hour exposure.
0.01	100	6.48	Kills smell in three to <i>fifteen (3-15)</i> minutes; may sting eyes and throat.  Altered respiration, coughing, drowsiness. Possible delayed death within 48 hours

**TOXIC EFFECTS OF HYDROGEN SULFIDE -continued-**

CONCENTRATION:

<u>%</u>	<u>PPM</u>	<u>GRI100 SCF</u>	<u>EFFECT:</u>
<u>HS</u>			
0.05	500	32.96	Dizziness; breathing ceases in a few minutes needs prompt artificial respiration. Self rescue impossible because of loss of muscle control.
0.07	700	45.36	Unconscious quickly. Death will result if not rescued promptly.
0.10	1000	64.80	Unconscious at once, followed by death within minutes.

### **III. GENERAL INFORMATION**

Hydrogen sulfide gas is one of the most deadly of all hazards in our work, It is also called H<sub>2</sub>S sour gas, unfretted hydrogen. Workers in the oil and gas industry are aware of its deadly properties, Sewer maintenance crew. Blasters. Miners, and some commercial fishermen also this gas.

Every employer, whose workers may at any time become exposed to H<sub>2</sub>S gas, must make sure they know how to recognize its presence, protect themselves and avoid its lethal effects, and rescue and administer first aid to victims who are overcome.

The purpose of this course is to help train employers and workers to recognize the characteristics and toxicity of H<sub>2</sub>S detection equipment and personal protection equipment required to operate safely in an H<sub>2</sub>S atmosphere. and review the rescue and first aid procedures needed to revive a victim.

### **IV. HAZARDS**

Hydrogen sulfide is a highly toxic, colorless gas, heavier than air with the odor of rotten eggs. If ignited, it burns with a blue flame and produces sulfur dioxide. Which is a very irritating gas with a pungent odor. H<sub>2</sub>S forms explosive mixtures with air, the lower explosive limit being 4.3% hydrogen sulfide and the upper explosive limit, 46% H<sub>2</sub>S is most frequently encountered in the production and refining of high sulfur petroleum. Natural gases, gypsum and sulfur mining strata and underground water because it is soluble in water, gas manufacture and manufacture of artificial silks and chemicals.

Hydrogen sulfide is generally recognized by a characteristic foul odor. Prolonged exposure to low concentrations has a tendency to act upon the olfactory nerves, thereby dulling the sense of smell. This is important, especially to those who think they can detect dangerous concentrations by the sense of those who think they can detect dangerous concentrations by the sense of smell. It acts on the eyes and respiratory system, resulting in irritation. Irritation to the eyes often causes severe pain and may incapacitate the worker. When high concentrations are present, death may occur before the odor is detected; death being due to lung paralysis.

### **V. SYMPTOMS**

### **A ACUTE**

Results in almost instantaneous asphyxia with seeming respiratory paralysis. Acute poisoning or strangulation may occur after even a few seconds' inhalation of a high concentration causing panting, pallor, cramps, paralysis. And almost immediate loss of consciousness. Death may follow with extreme rapidity from respiratory and cardiac paralysis. ONE SNIFF of a sufficiently high concentration may bring this about.

### **B. SUB-ACUTE**

Results in irritation, principally smarting of the eyes, persistent cough, tightening or burning in the chest, and skin irritation. A concentration of a few hundredths of one percent higher than causing irritation can cause asphyxia and death. In other words, there is a very narrow margin between consciousness and unconsciousness and death. A concentration of only 0.07% (700 parts per million in air ) of H<sub>2</sub>S may cause collapse, unconsciousness, and death.

Note: Where high concentrations cause respiratory paralysis, spontaneous breathing does not return unless artificial respiration is applied. Although breathing is paralyzed, the heart may continue beating for a few minutes after the attack. Therefore, it is of importance that artificial respiration be given as quickly as possible and continued until medical aid is available or until the victim resumes natural breathing.

### **C. OTHER EFFECTS**

There is no way of knowing what will happen when a person is exposed to H<sub>2</sub>S. Hysteria is not uncommon. Violent convulsions may result with the victim becoming very rigid before falling. Some victims have received injuries as a result of falling. The victim may be difficult to handle and will invariably need some form of artificial respiration to assist or restore breathing. There does not appear to be any cumulative effect to the body from repeated exposures, but there are reported cases in which the victim appears to have less resistance to subsequent exposures. Speed is essential in rescuing and administering first aid and the need for training in artificial respiration where workers may be exposed to H<sub>2</sub>S cannot be overemphasized.

## **VI. SULFUR DIOXIDE**

Sulfur dioxide is a colorless, transparent gas and is not-flammable. Sulfur dioxide ( SO<sub>2</sub> ) is produced during the burning of H<sub>2</sub>S or meriting. Although SO<sub>2</sub> is heavier than air, it will be picked up by a

breeze and carried downwind at elevated temperatures.

While sulfur dioxide is extremely irritating to the eyes and mucous membranes of the upper respiratory tract, it has exceptionally good warning powers in this respect.

**TOXIC EFFECTS OF SULFUR DIOXID**

.

CONCENTRATION		<u>EFFECTS:</u>
0002	2	Safe for 8-hour exposure.
0005	3 to 5	Pungent odor. Normally a person can detect SO2 in this range.
0012	12	Throat irritation, coughing, constriction of the chest. Tearing and smarting of the eyes
010	100	IDLH
015	150	So irritating that it can only be endured few minutes
05	500	Causes a sense of suffocation, even first breath. Immediately dangerous to life

**VII. DETECTION**

There are several ways you can be alerted to the presence of H2S gas Your nose is usually the first and unfortunately, sometimes the last. You one smell concentration of gas is in the 100-150 ppm range. The sense of smell is quick lost giving a false sense of securely.

When testing for H2S gas. Be prepared for lethal concentrations.

**WARNING! YOU CANNOT RELY ON YOUR NOSE TO TELL YOU**

## **HOW MUCH H<sub>2</sub>S IS PRESENT. WEAR YOUR BREATHING APPARATUS.**

To determine the amount of H<sub>2</sub>S present in your work area, one of the following means of detection should be used:

**LEAD ACETATE AMPOULES OR COATED STRIPS.** These change color ( usually turn brown or black) in the presence of H<sub>2</sub>S. The degree of color indicates the concentration. These are not accurate and should be used only as all indicator for the presence of H<sub>2</sub>S.

**AIR SAMPLING GAS DETECTOR TUBES.** The concentration of H<sub>2</sub>S is registered by the length of discoloration when air is drawn through the detector tube. There are several reliable makes and types available but their accuracy will depend on the training and practice of the operator.

**SENSING DEVICE.** Single or multiple sensors, which signal semi-conductor or lead acetate units, provide a system of continuous monitoring. Samples from hazard areas are tested by electrical or mechanical means at regular intervals. An alarm system, actuated by a sensing unit, will give warning when the H<sub>2</sub>S concentration gets above certain fixed limits.

## **VIII. SPECIAL HEALTH PROBLEMS**

It is believed that employees with special health problems such as listed below should not work in a H<sub>2</sub>S atmosphere or in an atmosphere requiring the wearing of a respirator.

- A perforated ear drum may allow air passage through the Eustachian.
- Emphysema.
- Chronic Pulmonary obstructive disease.
- Bronchial Asthma.
- Coronary Artery Disease.
- angina pectoris.
- Myocardial Infraction.
- Progressive or severe Hypertension.
- Claustrophobia.
- Diabetes.
- Grand Ma! Epilepsy.

If you should have any of these conditions. Please report them to your supervisor.

## **IX. EMERGENCY PLAN**

After a release or a potential release of H<sub>2</sub>S the following steps should be taken:

### **A DO NOT PANIC**

**B** Recognize detectors and audio/visual warning devices (alarms, flashing beacons, and wind sock).

**C** Hold your breath and rapidly leave area containing the H<sub>2</sub>S Move crosswise and upwind.

**D** Put on your breathing apparatus.

**E** Help anyone who appears to be affected by gas.

**F** Move quickly to the upwind “SAFE BRIEFING OR ASSEMBLY AREA” to receive instruction

## **X. SCBA - SELF CONTAINED BREATHING APPARATUS**

When you are required to work in or be present in any area where H<sub>2</sub>S is or may be found, you must wear breathing protection. Without protected by breathing apparatus, no workman shall enter any area where deficiency of oxygen may exist or where the atmosphere is contaminated or in danger of being contaminated by flammable or toxic vapors, gases or dusts in sufficient quantities to create a hazard.

There are certain jobs which cause H<sub>2</sub>S to be released into the air and it is necessary to protect workman. The type of equipment which is required for use in H<sub>2</sub>S gas is not designed nor intended to be worn continuously throughout the whole day. It is emergency equipment and must be treated as such.

It is most important that everyone realizes the limitations of each type of breathing apparatus.

### **A SPECIAL PROBLEMS IN SCBA UNITS**

#### **01) FACIAL HAIR**

Facial hair laying between the sealing surface of the face mask and the wearer’s skin will prevent a good seal. Even a few day growth of stubble will permit excessive contaminant penetration.

02) CONTACT LENS

Contact lenses shall not be worn while wearing a facemask in a contaminated atmosphere.

03) CORRECTIVE SPECTACLES

Spectacles that have temple bars or straps shall not be worn with a facemask.

04) MISCELLANEOUS SEALING PROBLEMS

Scars, hollow temples, very prominent cheekbone, deep skin creases, the lack of teeth or dentures may cause facemask sealing problems.

**B** TWO TUPES OF SCBA UNITS

01) EGRESS PACK

This type of apparatus can be used for a maximum of five (5) minutes entirely independent of the surrounding atmosphere. this unit supplies five (5) minutes of breathable air for egress only from hazardous environments.

02) RESCUE PACK

This type of apparatus can be used for a maximum of thirty (30) minutes entirely independent of the surrounding atmosphere. this unit supplies thirty (30) minutes of breathable air for egress only from hazardous environments.

**XI. RESCUE - FIRST AID**

**A** YOU MUST PUT ON YOUR BREATHING APPARATUS BEFORE ATTEMPTING A RESCUE. YOU TOO CAN BECOME A VICTIM.

**B** Remove victim immediately to fresh air zone.

**C** Maintain victim at rest.

**D** If patient is not breathing, commence artificial respiration immediately.

**E** Summon doctor or get victim to a doctor.

**F** Keep patient warm.



**G** When breathing is restored, give patient stimulants such as tea or coffee. hut do not leave unattended.

**H** If eyes are affected, wash them thoroughly with clear water ( cold compresses will help, for slight eye irritation)

**I** Patients should be kept under medical observation until the doctor declares them fit to return to work.

Once a victim is removed to pure air and respiration set in motion before the heart action ceases, rapid recovery may be expected.

In cases of slight or minor exposures where the workman has not been totally unconscious and wants to return to work after a short rest period.

it is recommended that he not be allowed to return work until the following day. His reflexes may not be normal and he could be subject to injury from other work hazards.

It is vitally important that everyone working around or near where hydrogen sulfide gas may be encountered HAVE a good working knowledge of artificial respiration. Practices should be held regularly to ensure that personnel maintain a working knowledge of some form of artificial respiration.

## **XII. ARTIFICIAL RESPIRATION ( Mouth-to-Mouth Resuscitation Method')**

**A** Place victim on his back, loosen clothing around neck and waist. Turn victim's head to the side, wipe out the mouth quickly, using your fingers to get rid of any foreign matter.

**B**Insert thumb in the mouth-grasp lower jaw and lift it forcibly upwards and forwards.

**C** Hold the lower jaw up and with the other close the victim's nostrils.

**D** Take a deep breath, place your mouth firmly over the victim's mouth, and breathe in once every 5 seconds.

**E**While breathing into the victim, watch chest rise to indicate air passage is clear.

**F**Remove your mouth from the victim's to allow breath to be exhaled count three and repeat.

Notice: every moment lost before beginning artificial respiration lesser chances for success.

Artificial respiration should be continued until the patient recover or rigor mortis sets in.

**APPENDIX III**

**CAMP INSPECTION**

**REPORT**

### CAMP INSPECTION REPORT

Project:..... For the month of .....  
Camp:..... Dt.. Inspected:..... 1/c Camp.....

**Good Satisfactory Not Satisfactory**

- 1. Workers Living Accommodation \_\_\_\_\_
- 2. workers Lavatory Block \_\_\_\_\_
- 3. workers Bath Room \_\_\_\_\_
- 4. kitchen \_\_\_\_\_
  - a. cook/Helper \_\_\_\_\_
    - i. Medically Examined \_\_\_\_\_
    - ii. Neat \_\_\_\_\_
    - iii. Wearing Aprons \_\_\_\_\_
  - b. Utensils \_\_\_\_\_
  - c. Gas System \_\_\_\_\_  
Satisfactory Not
  - d. Waste Disposal \_\_\_\_\_
  - e. Freezer \_\_\_\_\_
  - f. Exhaust Fan \_\_\_\_\_
  - g. Drinking Water \_\_\_\_\_
  - h. Quality of Food \_\_\_\_\_  
Satisfactory Good Satisfactory
  - i. Store \_\_\_\_\_
  - j. Food Stuff \_\_\_\_\_
  - k. General Neatness \_\_\_\_\_

- 1. Safety \_\_\_\_\_
  - 5. dining Hall \_\_\_\_\_
  - 6. staff Accommodation \_\_\_\_\_
  - 7. Staff Dining Hall \_\_\_\_\_
  - 8. store \_\_\_\_\_
  - 9. yard \_\_\_\_\_
  - 10. Generator Room/Electrical InstLn. \_\_\_\_\_
  - 11. Security Fencing/Lighting \_\_\_\_\_
- signature \_\_\_\_\_

Safety Officer

Name:

**APPENDIX IV**

**INSPECTION REPORT**

**(PRIME MOVER, TRUCKS,**

**LIGHT VEHICLES)**

**INSPECTION REPORT**  
**GENERATOR INSTALLATION**  
**(To filled in for each Generator)**

1. Site of installation \_\_\_\_\_

2. Capacity of Generator

01. K.V.A

02. Make

03. Year of Mfg.

04. Full Load Current

05. No. of Phases

3. Metering

01. Is Voltmeter available at Generator Panel? : Yes/No

02. If Voltmeter is available, is it working? : Yes/No

03. Is Ammeter available at Generator Panel? : Yes/No

04. If Ammeter is available, is it working? : Yes/No

4. Protection

01. Protection just after Generator Terminal : Available/Not Available

02. Type of Protection – Isolator : Yes/No

- Fuse Switch : Yes/No

- MCCB : Yes/No

03. Protection Fuse/MCCB Rating: \_\_\_\_\_Amps.

5. Grounding

01. Is Generator neutral grounded? : Yes/No

02. . Is Generator body grounded? : Yes/No

03.No. of ground pits. : Yes/No

04. Value of ground resistance : Yes/No

05. If ground pit not available, how has the grounding been done?

Describe:.....  
.....  
.....

06. Distribution System after Generator

01. Is the system sound and safe:-----

If upgrading necessary: -----

Describe requirement.:-----  
-----  
-----  
-----

02.

i. Check state of Distribution Boards/Busbar

ii. Check cable outgoing.

iii. Check grounding of installation.

07. Recommendation for Improvement

-----  
-----  
-----  
-----  
-----  
-----  
-----  
-----

-----  
-----  
-----

Inspected on----- Inspected by-----

(Name)



**APPENDIX V**

**INSPECTION REPORT**

**GENERATORS**



16. General Appearance of Vehicle: OK [ ] Needs Work [ ]  
If needs work be specific \_\_\_\_\_

**IF APPLICABLE:**

1. fifth Wheel Hook-up: OK [ ] Needs Work [ ]  
If needs work be specific \_\_\_\_\_

2. Condition of Air Hoses and Fittings: OK [ ] Needs Work [ ]  
If needs work be specific \_\_\_\_\_

3. Condition of Winch and Cables: OK [ ] Needs Work [ ]  
If needs work be specific \_\_\_\_\_

4. Condition of Hitch: OK [ ] Needs Work [ ]  
If needs work be specific \_\_\_\_\_

**RECOMMENDATION:**

1. Is Vehicle ready to be put back into service: YES [ ] NO [ ]

2. if above question is NO list all repairs that must be completed prior to vehicle returning to service:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Date Vehicle Taken Out of Service: \_\_\_\_\_

4. Date Vehicle Returned to Service: \_\_\_\_\_

Inspector's Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**APPENDIX VI**

**ORGANIZATION CHART**

**JOB RESPONSIBILITY**

## **I. OWNERS & GENERAL MANAGER**

Although they are not present daily on project sites, yet their responsibilities include:

- A. . Will ensure that there is an effective policy for health and safety within the Company.
- B. Periodically appraise the effectiveness of the policy and ensure that any necessary changes are made.
- C. Through the Managers, Superintendents, and Safety Manager ensure that a Safety and Accident Prevention Plan is established and executed on site of each project.

## **II. MANAGERS AND ENGINEERS IN CHARGE OF PROJECTS**

- A. Ensure that the Company's policy is understood and affected by all his subordinates.
- B. Determine at the planning stage.
  - 1.. The most appropriate order and method of working.
  - 2.. Allocation of responsibilities with sub-contractors and clients.
- C. Ensure that safe working practices are adopted and are carried out as planned.
- D. Maintain working methods in accordance with the safety regulations of the Company and those imposed by the clients.

## **III. SUPERINTENDENTS/CONSTRUCTION MANAGERS**

- A. Ensure that all plant and equipment on site or place of work is safe, guarded and equipped with appropriate safety devices.
- B. Ensure that all personnel employed are suitable for the jobs they have been recruited for.

- C. Check that periodic tests. Inspections and maintenance work are carried out on equipment and tools used.
- D. Ensure that correct procedures and systems of work are being developed and maintained.
- E. Appraise the effectiveness of all supervision under

#### **IV.SUPERVISORS/FOREMEN**

- A. Organize sites/places or work so that work is carried out to the required standard with minimum risk to men, equipment and materials.
- B. Know the broad requirements of relevant safety regulations and clients specific provisions.
- C. Give all trades precise instructions on their responsibilities for correct working methods.
- D. Arrange delivery and stacking of materials to avoid increasing the risks of double handling; position plant effectively; ensure that electrical supply is safely maintained.
- E. Plan and maintain a tidy site/work area arranging for removal of debris daily.
- F. Implement arrangements with sub-contractors and others to avoid any confusion about areas of responsibility.
- G. Check that all machinery and plant are maintained in good condition. Report any defects immediately.
- H. Make sure adequate clothing and equipment is issued to each person and that the equipment is used.
- I. Ensure that all persons in his control know what to do in the event of fire or other emergency.
- J. Arrange to investigate all accidents promptly to discover their cause and eliminate recurrence and to report findings to the Safety Manager for further investigation.
- K. Liaise with his superiors on matters of safety and where necessary consult the Safety Manager.

L. Continually develop safe practices in his section to ensure maximum safety for all under his supervision.

**V. ALL EMPLOYEES OF NASHTON**

- A. Shall use the correct materials, tools, equipment and methods for the work they are carrying out.
- B. Ensure that all safety equipment/clothing provided for safety is used and maintained in good condition.
- C. Develop a personal concern for themselves and other around them.
- D. Avoid improvising which entails unnecessary risk.
- E. Observe all safety rules at all times.

**VI. PROJECT SAFETY MANAGER**

- A. Advise the Project Personnel on:
  - 1. prevention of injury to personnel and damage to plant and equipment.
  - 2. further improvements in existing working methods.
  - 3. Application of Company Safety Procedures and those of the client.
  - 4. Suitability from a safety viewpoint of new and hired plant and equipment and validity of all appropriate test certificates.
  - 5. Suitability standards of protective clothing and equipment.
  - 6. potential hazards on new contracts before work commences.
- B. The site/work area safety organization and fire precautions required.

- C. Carry out survey and inspections on a regular basis in association with supervision to ensure that safe working practices are in operation.
  
- D. Investigate all accidents promptly and supervise the recording, analysis of information on injuries , damage and production loss, assess accident trends and review overall safety performances and recommendations.
  
- E. Develop and coordinate a training program for all levels of employ promote awareness of injury prevention and damage control.



## **APPENDIX VII**

### **SECURITY PROCEDURE**

## **I. SECURITY PROCEDURE**

### **A. PERSONNEL ADMITTANCE TO PROJECT**

1. All personnel entering the project premises will be in possession of a security badge (including *vendor's*, *supplier's* and *subcontractor's* personnel).
2. personnel not in possession of their security badges will be refused admission to the project until such time as they are identified by their Company Official who can authorize, by his signature, admittance to the project.
3. personnel refused admittance can use the security telephone to contact their Company Official if a telephone is available.
4. Should there be not telephone facility to individual concerned by other personnel from the same company concerned by other personnel from the same company who have obtained authorized entry to the project.

### **B. REMOVAL OF EQUIPMENT, TOOLS, MATERIAL FROM FENCED SITES**

#### **1. GENERAL**

No person is allowed to remove from site, any tools, equipment or material , unless he is in possession of a gate pass listing the items to be removed by authorized signatories ( Construction Manager/Site Superintendent).

#### **2. DEPARTURE OF CONSTRUCTION VEHICLES**

Construction vehicles and equipment leaving the project site loaded with material do require authorization from the Construction manager/Superintendent.

### **C. SECURITY GUARD GENERAL INSTRUCTION**

#### **1. GENERAL**

The Security Guards will maintain an alert attitude and observe carefully, everything taking place in the assigned area.

Violations and will enforce all orders, rules and regulations as instructed in the post special orders or as directed by the Construction Manager

The Security Guard will not leave his post unless properly relieved or unless required to do so in performance of assigned functions.

#### **2. LOG BOOK**

The Security Officer will obey and enter in the post log book, all order received verbally or in writing.

#### **3. CONVERSATION WITH OTHERS**

The Security Guard will restrict conversations with fellow employees. Vendors, sub-contractors, etc. to job related matters only.

#### **4. GUARD INSTRUCTIONS**

In the event of an emergency situation not covered by instruction, the Security Guard will call the Construction Manager or Superintendent immediately.

A Security Guard receiving instructions from someone other than the project Management or Superintendent, will advise the person that such instruction cannot be carried out unless authorized by one of the above listed persons.

Instructions in direct contradiction to general or special orders will not be Ibilowed unless approved by the Management.

5. **FALSE INFORMATION**

A Security Officer who willfully issues false information or makes false statements regarding assignments and/or responsibilities to fellow Security Officer, Supervisors, or Client personnel, will be subject to termination.

6. **GRATUITIES**

Security personnel are prohibited from accepting gratuities from anyone for any purpose. Any offer of a gratuity is to be reported promptly to the Construction Manager or Superintendent.

7. **PUBLIC/PERSONNEL RELATIONS**

Security Guard will use discretion and care in the questioning of project employees and in the handling of possible irregularities.

Under no circumstance will a Security Guard question a person except in the presence of a reliable witness.

Under no circumstance will a Security Guard threaten, touch (except in self-defense), assault or coerce in any way. Any person.

Every effort must be made by Security Guards to positively identify people who refuse to comply with normal security instructions. All such instances must be reported immediately to the Project Management or Superintendent.

Security Guards, at all times, must be professional and helpful in their approach to the project workforce and in their dealings with the general public. It is expected that they and their work places be clean and tidy at all times i.e. main guard gate, offices, etc.

8. **PROBLEMS WITH INSTRUCTIONS**

Security Guards who experience difficulty in interpreting instructions, duties, etc. Must obtain advice from the Construction Manager or Superintendent promptly. The excuse "I wasn't sure or I didn't understand" is not acceptable if an efficient security operation is carried out to the benefit of the project.

9. **PHOTOGRAPHY**

Photography on site will only be allowed if prior permission is obtained from the Client and photographs will only be taken in accordance to the Client's rules and regulations.

**APPENDIX VIII**

**ACCIDENT REPORTS**

**AND**

**RECORDS PROCEDURE**

## **I. ACCIDENTS, REPORTS AND RECORDS PROCEDURE**

An immediate verbal report will be made to the Project Manager/Construction anager/Superintendent in the case of:

- I. All fatal injuries.
2. All serious injuries.
3. All damage to Client/Company plant, equipment and materials over U.S.D.\$ 1 .000.00
4. All fires
5. Near misses.
6. Minor injuries i.e. first aid.

B. Initial verbal reports of such incidents will be followed by a written report detailing circumstances, corrective action taken and action recommended to prevent a recurrence.

C. Written reports will be upon standard forms. In the cases of serious accidents, a fully detailed account of the circumstances with witnesses statements and descriptive photographs will be made.

D. In addition to the reports mentioned above the Project Manager/Construction Manager/Superintendent will keep records of all injuries and damage to property. These will be kept by the Safety Manager and/or the person responsible for administration for review by the Company's top management.

## **II. ACCIDENT INVESTIGATION**

A. Accident investigations will be conducted in a manner. Which will provide facts rather than faults. The point of such investigations is to prevent recurrence of similar accidents. Each accident will be followed by an investigation.

B. The main purposes of an accident investigation are

1. To find the causes so that similar accidents are prevented

2. To determine the point at which “unplanned” event took over from the planned sequence of events.
3. to recommend the corrective action to be taken.

### **III. RESPONSIBILITIES FOR CARRYING OUT INVESTIGATIONS**

#### **A. SUPERVISOR/FOREMAN**

The Supervisor or Foreman will carry out an immediate investigation of every accident that occurs within his area of responsibility . He will complete an Accident that Report as soon as possible and submit **it** to his superior, with a copy to the Project Safety Manager.

#### **B. PROJECT SAFETY MANAGER**

As soon as possible, the Project Safety Manager will verify the findings of the Foreman and carry out an independent investigation of every serious or potentially serious occurrence, a copy of each independent report will be submitted to the Project Manager/Construction Manager/Superintendent.

#### **C. PROJECT MANAGER / CONSTRUCTION MANAGER / SUPERINTENDENT**

They will review all accident investigation reports to insure that corrective action has been taken and to observe any trends that may require action on their part.

### **IV. REPORTING PROCEDURE - PERSONAL INJURY**

- A. In the event of any injury the injured the injured person will if possible go to the first Aid Center for treatment.
- B. The Medical Officer or nurse or nurse responsible for first aid treatment will record details of the injure on the form “Daily Accident Register” . If the injury is minor the injured person will be sent back to work after treatment.



- C. If the injured person requires leave from duty or to go to hospital this will require approval by the Superintendent. In the case of an emergency this may be bypassed, but the injured person's supervisor will be kept informed of the situation
- D. If leave from duty or a visit to the hospital is required the person responsible for first aid will complete the form "Application for Medical Treatment". This form will require authorization by the injured person's Superintendent.
- E. All completed forms will be returned to the officer responsible for first aid. Any comments from the hospital will be communicated to the injured person's Foreman/Superintendent.
- F. If the injured person loses more than one day as a result of his injuries a "Personal Accident Injury and Investigation" form will be issued by the officer responsible for first aid and submitted to the appropriate Supervisor for completion.
- G. Copies of "Application for Medical Treatment" and "Personal Accident. Injury and Investigation" forms will be submitted by the Supervisor to:
  - 1. His immediate superior.
  - 2. Safety Manager/First Aid Center.
  - 3. Project Administration Officer/Construction manager/Superintendent.

V. **REPORTING PROCEDURE-PROPERTY DAMAGE**

- A. In the event of any accident which involves damage or loss to any property, whether owned by Company or not will be reported on "Property Damage and Loss Report" form.
- B. The responsibility for reporting are the same as indicated earlier in this procedure

- C. It is important that immediate notification is made verbally to the Project Safety Manager and Project Administrator/Insurance Clerk as notification to the Insurers is essential within 24 hours of the incident.
- D. Copies of all reports will be sent to;
  - 1. project Manager/Construction Manager/Superintendent
  - 2. project Safety Manager
  - 3. Project Administrator/Insurance Clerk
- E. Photographs of damage are essential and will be arranged if possible before materials are removed or the work on site is rearranged.
- F. All damage will be reported. The responsibility for filing claims is that of the project Administrator/Insurance Clerk no matter how small the damage may appear it will be reported.
- G. Estimates of damage are always necessary but under no circumstances will these be discussed with any third party.
- H. Repairs will not be carried out until the Project Administrator/Insurance Clerk gives clearance. However, if danger prevails immediate action will be taken to render the area safe.
- I. All reports and communications with the insurers will be executed by the Project Administrator/Insurance Clerk.

## **VI. MONTHLY STATISTICS**

- A. At the end of each month the Project Safety Manager will issue a report indicating the safety performance of the project for the previous month. The Client's monthly safety statistics form will also need to be completed, if and as required.

- B. The Project Safety Manager will submit copies of this report to all the senior staff on the project.
- C. The Project Administrator will ensure that a copy of this report is sent to Managing Main Office, with the Monthly Progress Report.

## **VII. REPORTING FORMS**

- A. The following pages show copies of forms used for reporting of accidents:
  - B. The forms used are:
    1. Application for Medical Treatment.
    2. Personal Accident Injury and Investigation
    3. Property Damage and Loss Report.
    4. Daily Accident Register
    5. Monthly Accident Report.
    6. Near Miss Accident Report.

## **VIII. DEFINITIONS**

For the purpose of these procedures the following definitions will apply:

1. **LOST TIME ACCIDENT**  
An accident which causes absence from duty for an employee beyond the day or shift in which the accident occurred.
2. **MINOR ACCIDENT**  
An accident, which results in first aid treatment and the person, returns work immediately after treatment.
3. **OFF DUTY ACCIDENTS**  
An accident that occurs outside the hours of work which the employee is employed.

4. **FREQUENCY RATE**

The rate used to compare accident and injury statistics within the project section by section. Direct comparisons can be made as the rate is a function of the hours worked (see formula below).

$$F.R = \frac{(\text{NO. OF LOST TIME ACCIDENTS} \times 1.000.000 \text{ MAN HRS.})}{\text{Amount of man hours worked}}$$

Amount of man hours worked

<b><u>LIST THE ESTIMATED COSTS OF REP AIR OR REPLACEMENT</u></b>
EQUIPMENT: ----- ----- ----- ----- -----
LABOR COSTS FOR REPAIR: ----- ----- ----- -----
<b>INTERRUPTED MACHINE /EQUIOMENT TIME LOSS:</b> ----- ----- ----- -----
MISCELLANEOUS COSTS :----- ----- ----- -----
FOREMAN DIRECTLY IN CHARGE:-----
SIGNED: -----SUPERVISOR----- DATE: -----

TO BE COMPLETED BY HEALTH AND SAFETY OFFICER:

ACTUAL COST: -----

INSURANCE COMPANY NOTIFIED YES! NO----- DATE: -----

SIGNED----- DATE: -----

**PROPERTY DAMAGE AND LOSS REPORT**

DAMAGE / LOSS:-----  
-----  
-----  
-----

LOCATION AT WHICH DAMAGE/LOSS OCCURRED -----  
-----  
-----  
-----

LIST OF ITEMS DAMAGED OR LOST: -----  
-----  
-----  
-----  
-----

IDENTIFY/DESCRIBE DAMAGE TO PROPERTY (BY ITEMS)::-----  
-----  
-----  
-----

OWNERSHIP OF PROPERTY DAMAGED (IF NOT BHTC STATE) OWNER'S NAME AND ADDRESS -----  
-----  
-----  
-----

ACTION TAAKEN TO PREVENT RECURRENCE-----  
-----  
-----  
-----

**APPLCATION FOR MEDICAL TREATMENT  
TO WHOM IT MAY CONCERN**

WE REFER THE PERSON NAMED BELOW FOR FURTHER TREATMENT AND FOR EXAMINATION AND WOULD BE OBLIGED FOR ANY COMMENTS YOU MAY HAVE.

PATIENTS NAME:-----

NATIONALTY : -----

AGE:----- DESIGNATION----- : I.D.NO: -----

DATE OF ENGAGEMENT:----- LOCATION: -----

IF ACCIDENT, PLACE WHERE IT OCCURRED: -----

DATE AND TIME REPORTED: -----

DESCRIPTION OF ACCIDENT / SICKNESS: -----

AND TREATMENT GIVEN: -----

-----

SIGNED:----- MEDIC DATE: -----

MEDICAL OFFICER / HOSPITAL REPORT:

-----  
-----  
-----  
-----  
-----

DATE EXPECTED TO COMMENCE WORK : -----

SIGNED: -----

DATE-----

**Safety meeting**

**Personnel Attend safety meeting No( )**

**Date: //**

S.n.	Name of the	Position	Signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Topics:

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