





# HSE PLAN Procedure

**POOYA RAHBAR  
Engineer Co.**


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## ***1. SCOPE***


The intention of this document is to describe specific procedures to be adopted to safeguard the personnel and equipment during construction of the Project.

## ***2. THE CONTRACTOR'S HEALTH, SAFETY & ENVIRONMENT POLICY:***

Safety is considered as an integral and important of all PROJECT functions. Contractor will assign Safety Managers, who will coordinate all safety activities and ensures that all required safety procedures, regulations and controls are understood and strictly enforced. There will be safety and Environment Engineers under Supervisions of Project Manager.

Management and supervisors at all levels will be responsible for the effectiveness of the following safety principles:

- 2.1. Safe work environments to be provided through proper execution of the works and use of appropriate equipment and facilities.
- 2.2. Employee will be selected and replaced the jobs consist with their physical and mental abilities in order to perform them safety.
- 2.3. Employees will be thoroughly instructed and trained in the accident prevention and fire protection requirements of their work assignment.
- 2.4. Improving safety of the works will be encouraged and safety issues will be promptly and properly handled by the supervisors.
- 2.5. Hazardous Jobs will be analyzed and Job safety procedures will be worked out among all operators and their supervisors.
- 2.6. Continuous safety inspections will be conducted to identify and correct unsafe acts and conditions. Weekly Safety Meetings will be held at site locations. General safety issues will be reviewed, the site safety record for the week before will be analyzed and each week one important safety topic will be discussed in detail. Employee contributions to the discussions will be requested and encouraged in proper manner.

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2.7. Provisions will be made for responding to emergencies which will provide optimum protection to personnel property. All works injuries, property damages and fire break outs, immediately be reported and promptly and thoroughly investigated to identify the causes and initiate effective corrective actions.

2.8. All levels of management shall demonstrate interest in accident by active participating in and prompting the principles set out in the company's safety program.

2.9. All employees, supervisors and management personnel shall be held responsible for their safety performance. It will have an important weight in the overall appraisal of the employee's performance and reward.


### ***3. ORGANIZATION AND RESPONSIBILITIES***

3.1. The ultimate responsibility for site safety rests with the Project Director. However, in order to ensure that the safety procedures are effectively implemented, the Site Safety Engineer will be directly responsible to the Project Manager for all safety matters. In practice he will cooperate with all supervisory personnel on a daily basis and keep the Project Manager advised of site safety conditions by means of a regular report. Should any condition arise which could constitute a serious safety hazard, the Project Manager will be informed immediately.

3.2. All supervisory staff are responsible for the safety of their under control personnel. As such, they are required to familiarize themselves with the site safety Rules, Safety Procedures and other Safety Notice which may be issued from time to time. They are also responsible for ensuring that all personnel understand what is required from them in terms of safe practices.

3.3. It must be stressed that all personnel are equally responsible for one another's safety and are obliged to inform their immediate superiors if and when conditions which are likely to be detrimental to site safety are discovered. This does not however relieve the Safety Officer, or supervisory staff of their responsibilities to ensure that personnel and property are safeguarded.

3.4. Lines of communication between the Safety Officer and other personnel are as shown in the organization chart. Also included are descriptions on the responsibilities of the Project Manager, the Safety Engineer, supervisory Staff, Employees and sub-contractors.


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#### 3.4.1. Project Manager's Responsibilities:

- i) Satisfy himself as to be competency of his supervisory staff.
- ii) Plan and prepare work procedures and site layouts before the commencement of contracts, including the involvement of sub-contractors.
- iii) Ascertain potential hazards or processes before commencement of work and inform all site staff accordingly.
- iv) To ensure that all subcontractors meet their obligations under current legislation, codes of practice, contractor Safety Policy and Procedures and all conditions set out in the contractual sub-contractors safety policy statement and means of implementation.
- v) Keep him abreast of current legislation and codes of practice.

#### 3.4.2. Safety Engineer's Responsibilities:

- i) Ensure that all safety regulations and procedures are followed.
- ii) Carries out routine checks on plant and equipment to ensure that they are in a safe condition.
- iii) Routinely inspect first aid facilities to ensure that an adequate supply of emergency medicaments is maintained.
- iv) Coordinates safety measures when construction is taking place adjacent to hazardous area, e.g. overhead power lines, buried gas utilities, etc.
- v) Ensure that personnel wear the appropriate protective clothing and equipment.
- vi) Ensure that fire fighting equipment is properly maintained and is in the correct location
- vii) Briefs new employees and visitors on site safety rules.
- viii) Monitor site activities so as to prevent dangerous work practices.
- ix) Conducts schedule site safety inspections of sub-contractors.
- x) Coordinate and participate in sub-contractors safety meetings regularly.
- xi) Prepare and compile safety reports.

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- xii) Ensure that the appropriate warning signs are posted during blasting, radiography or other hazardous activities e.g. road crossings, railway crossings, etc., to safeguard the public and other users.
- xiii) Compiles safety statistics weekly.
- xiv) Safety training for Supervisors inclusive of First Aid, Fire fighting, etc.
- xv) Control issues of safety equipment.
- xvi) Issues and follow-up of Safety Punch List.
- xvii) Liaison with contractor sub-contractors, government and authorities on all safety and health matters.

#### 3.4.3. Supervisory Staff's Responsibilities:


- i) All supervisory staff are responsible to their immediate superiors for the safety of the personnel under their control.
- ii) They shall ensure that all safety rules are observed and shall maintain discipline at all times
- iii) The supervisors are responsible for notifying the Safety Engineer and their immediate superiors of any condition which could be prejudicial to site safety or to the general public as a whole.
- iv) They will ensure that first aid kits are kept replenished and accessible.
- v) They are required to report any accident to the Safety Officer, and to make a note of such accident in their daily report.

#### 3.4.4. Employee's Responsibilities:

No employee shall intentionally recklessly interfere with or misuse anything provided for his safety or welfare under any relevant statutory provision.

#### 3.4.5. Sub-Contractor's Responsibilities:

- i) Sub-contractors are legally responsible for the safety of everyone on the work site, and to assure ourselves that sub-contractors understand their obligations, whilst on our

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premises, it is essential that contractor Safety Policy is made clear to them when tendering for works.

- ii) Sub-contractors must provide evidence that they are adequately insured for common law damages, awards and Government Provisions.
- iii) It is important that contractors ascertain the position of below-ground services before starting any excavation work. When reinstatement is carried out any protective tiles, ducting, warning tapes, etc. must be fully restored.
- iv) The Safety Officer investigates all accidents which occur on our premises and we expect the cooperation of contractors in investigating the true cause of any accident. In order to try to prevent a recurrence, all accidents, fire or damage to contractor or sub-contractor's property, must be reported immediately to the Safety Engineer.
- v) In order to minimize the possibility of loss of materials and goods, sub-contractors should endeavor to ensure that if possible, no supplies for them should arrive before their supervisors can take delivery.
- vi) Sub-contractors are responsible for the safe keeping of their tools and materials.
- vii) No permission or consent under these rules shall in any way relieve the sub-contractor of his liability for accidents, injury or damage under the contract.

#### ***4. GENERAL SAFETY RULES***


##### 4.1. Introduction

4.1.1. It shall be ensured that each employee is provided with a copy of the project basic safety rules and regulations.

4.1.2. Each employee is required to know and to comply with the applicable safety rules and regulation. Any employee, regardless of point of hire, who does not comply with the safety rules and regulations or his supervisor's instructions, shall be dismissed.

##### 4.2. Approved Safety Equipment And Clothing



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4.2.1. Approved safety clothing including eye protection, safety shoes, helmets and gloves issued to the employee shall be properly worn by him.

4.2.2. All accidents resulting in injury or damage to property shall be reported immediately to the employee's supervisor.

4.2.3. Defective safety equipment and clothing shall be replaced promptly.

4.2.4. All safety protective equipment and clothing issued shall be returned to contractor store upon employee's termination.

#### 4.3. Equipment, Machines, Tools And Job Site Operations

4.3.1. Equipment, machines or special tools shall not be operated without authorization from the supervisor.

4.3.2. Motorized equipment and vehicle shall be operated in a safe manner and in accordance with posted limits.

4.3.3. No safety equipment or guards provided on tools and equipment shall be removed or blocked during operations, except, during repairs. Such safety equipment or guards shall be replacing after repairs, before re-using tools or equipment.

4.3.4. Fighting, wrestling or other horseplay on the job site is strictly forbidden.

4.3.5. Employees shall not ride on any equipment unless a seat is provided.

4.3.6. Power tools, machines or equipment shall not be fueled while the engine is running.


4.3.7. Employees are forbidden to sit or lie down behind or in front of parked equipment.

4.3.8. Electrical tools that are not properly grounded shall not be used.

4.3.9. Employees shall not jump off moving equipment.

#### 4.4. Equipment Operators And Drivers Rules

In addition to the general safety rules and regulations for all employees, equipment operators and drivers shall:

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4.4.1. Know and understand the operation of the respective unit assigned equipment.

4.4.2. Prior to start up of equipment:

- i) Review the service checklist located near the operator's station and report any noted defects of safety equipment or other defects to supervisor.
- ii) Make a complete walk around of equipment or vehicles before start up to ensure safe clearance will be maintained or that employees are not resting adjacent to equipment.
- iii) Check engine, oil and water levels (do not remove radiators caps if the engine is overheated).

4.4.3. During Operation of Equipment or Vehicle:

- i) Stay at the controls unless relieved by a new operator or authorized by a supervisor.
- ii) Maintain alertness for unusual sounds which may be an indication of a defect and report the same to supervisor immediately.
- iii) Follow other vehicles at a safe distance. Parking shall be limited to area where positive clearance and visibility are available.
- iv) Travel at speed which is safe for the prevailing conditions. Excessive speeds are **ABSOLUTELY FORBIDDEN**.
- v) Do not operate any equipment within three (3) meters of any electrical lines.
- vi) Load and unload equipment using all safety precautions.
- vii) Do not allow other employees to ride on equipment unless proper seating is provided.
- viii) Do not haul explosives on vehicular equipment unless authorized by Safety Engineer. If so authorized, the vehicles shall be properly prepared and have the required signs and safety equipment.
- ix) Routinely inspect the safe condition of all loads being hauled including chains, cables or other tie downs.
- x) Positively secure all equipment or vehicle against movement prior to shut down. Lower blades, buckets or other accessories to ground when not in use.

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xi) Maintain a daily equipment log.

#### 4.5. Welder And Helpers Rules

In addition to the general safety rules and regulations for all employees, welders and helpers shall:

- 4.5.1. Safety inspects all tools and equipment prior to their use.
- 4.5.2. Not weld cut or grind metal drums, containers or hollow structures prior to through cleaning to ensure that an explosive atmosphere does not exist.
- 4.5.3. Wear proper body, face and eye protective clothing.
- 4.5.4. Keep the key used to open valves of gas cylinders in place during use in case of emergency shut-off.
- 4.5.5. Keep gas bottle valves closed tight when not in use.
- 4.5.6. Not transport gas bottles unless cap is in place and secure.
- 4.5.7. Not move gas cylinders by their valves or regulators.
- 4.5.8. Position portable gas cylinders so as to prevent accidental movement or tipping.
- 4.5.9. Inspect the immediately area before grind or welding to avoid injury to other employees from grinding sparks or arch flash.

#### 4.6. Mechanics and Maintenance Personnel Rules

In addition to the safety rules and regulations for all employees, mechanic and maintenance personnel shall:

- 4.6.1. Use eye protection goggles or masks when doing any welding, grinding, burning, etc.
- 4.6.2. Not jump from equipment
- 4.6.3. not store oily rags in equipment



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4.6.4. Use adequate blocking to support all loads that have been jacked means, or rose to higher position. **ABSOLUTELY** no raised loads shall be left supported by only hydraulic or mechanical

4.6.5. Conspicuously display **DO NOT START** or **RED TAG** warning signs near the start switch or button, of all equipment shutdown for repair unless such repairs do not necessitate engine shut-off. In any event make sure that only the authorized operator is at the controls.

4.6.6. Beware of moving parts such as fan belts and blades, chains, or associated moving parts when making repair servicing.

4.6.7. Not spill fuel on equipment or drag fuel filler nozzle on ground.

4.6.8. Wipe equipment clean before using.

4.6.9. Be absolutely positive that the correct lubricant is available and used as required by the manufacture. **DO NOT GUESS.**

4.6.10. not overfill lube and grease reservoirs

4.6.11. maintain cleanliness and good housekeeping when servicing equipment and vehicles

4.6.12. Maintain a suitable and serviceable fire extinguisher at the place of work or on the service vehicle **AT ALL TIMES.**

4.6.13. **IMMEDIATELY** report to supervisor any defects or potential defects noted on equipment or vehicles. If the defect is serious, **RED TAG** equipment and **IMMEDIATELY** notify supervisor.

### 4.7. Laborers (All crafts) Rules

In addition to the safety rules and regulations for all employees, employees of the laborer's craft shall abide by the **SAFETY RULES** and shall:

4.7.1. Inspect all hand tools for defects prior to use. Report defects to foreman. Abuse in the use of hand tools will not be permitted.



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4.7.2. stand clear of loads being handled by machinery

4.7.3. Make sure clothing is not loose or comes in contact with moving and rotating parts of machinery.

4.7.4. protect eyes, hands and other parts of the body

4.7.5. When working is drilling and blasting operations:

- i) do not smoke or carry spark-producing objects during the handling of explosive
- ii) do not re-enter a fire shot area until authorized by the blasting foreman
- iii) do not carry detonators or explosive in the pockets of personal clothing
- iv) do not leave drilling equipment unattended.
- v) do not leave explosive lying loose. Explosives are to remain in the powder magazines unless immediately used.
- vi) Wire clip ALL air hose connections prior to use.
- vii) do not drill or redress into a hole that has been charged with explosives or that has misfired.

### 4.8. Fire Prevention and Protection

To minimize job site losses from fire, the following fire prevention and protection plan are established:


4.8.1. The layout of storage areas and materials shall be safely segregated.

4.8.2. Adequate access and fire lanes shall be maintained in storage areas, camps, warehouses, equipment yards and other facilities.

4.8.3. Good housekeeping practices and disposal or burning of wastes shall be maintained.

4.8.4. Vegetation or other material vulnerable to fire shall be removed.

4.8.5. Explosive shall be handled by AUTHORIZED PERSONNEL only. Magazines shall be set up in an area cleared of any possible fire hazards and shall be adequately signed.

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4.8.6. Heating units shall be free of encumbrances and adequately maintained.

4.8.7. Fuel storage sites shall be set up in cleared areas, shall be protected from traffic damage, and adequately signposted and lit for night use.

4.8.8. Adequate fire extinguishes shall be installed at appropriate locations and shall be routinely serviced and immediately reserved after use, regardless of extent of use.

4.8.9. Fire hydrants and other suitable outlets shall be installed where necessary. Fire hoses and nozzles shall be inspected routinely. Hoses shall be coiled and hung off the ground.

4.8.10. Supervisors shall be conversant with the project procedures covering job site fire prevention, fire control and fire fighting methods.

## ***5. SAFETY PROCEDURES***

### **5.1. Welding, Grinding And Cutting**

5.1.1. In addition to the general safety rules, the following points shall be respected:

- i) All electric cables, including welding cables shall be inspected for damage before being used. Any broken insulation or frayed end, shall be brought to the attention of the welding foreman who will be responsible for ensuring that the defective material is either repaired or replaced.
- ii) It is impractical for welders to wear hard hats during welding operations therefore they must be extra vigilant when working on the pipeline and extra care must be exercised by all employees when working in the vicinity of welding stations.
- iii) For all welding and flame cutting operations, the appropriate filter lens shall be used to provide protection against indirect energy.
- iv) Care must be taken by all employees when walking past any welding, cutting or grinding operation. In particular they should not look at a welding arc, or a cutting flame without proper eye protection. Similarly, they must ensure that when passing a grinding operation, they do not come into contact with the grinding sparks.



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### **Welding**

5.1.2. Prior to starting any welding work on site, the welding foreman shall satisfy himself that all lifting equipment, welding rigs, line-up clamps and other associated equipment are suitable for the work and are in safe condition. In addition, he will ensure that only trained personnel operate the equipment.

5.1.3. As a part of his inspection of the equipment, the welding foreman will ensure that the welding rig fire extinguisher is in a serviceable condition and in its correct place.

5.1.4. Protection of the eyes against Radiant Energy shall be exercised during the welding operations.

5.1.5. The welding foreman shall ensure that all welders and helpers are issued with the appropriate protective clothing and eye shields, before commencing any welding. He will also ensure that the welders and helpers are wearing long trousers and long sleeved shirts. The wearing of short sleeves, T-shirts or any sleeveless garment by welders or their helpers is prohibited.

5.1.6. If practicable, the welding foreman should place screens around the welding operation to shield other workers from the arc flashes.

5.1.7. During the welding, the Forman shall monitor the work to ensure that the coating is protected from

5.1.8. weld spatter and no combustion material is near to the piece being welded. Due care is exercised when disposing of ROD ends, gas cylinders, air hoses etc., are kept away from the welding area and that the protective clothing and eye shields are used.

5.1.9. Following welding, the welder and his helper shall ensure that no sparks are left smoldering on the pipe coating or in a position where a fire could be caused. In addition any hot welding rods or rod ends shall be disposed of carefully.



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### **Grinding**

5.1.10. Before attempting any grinding, the operator shall check that the correct grinding disc appropriate to the grinding machine has been properly mounted by someone who has been trained and approved to perform the task. If the disc shows signs of damage (other than normal wear) it shall be replaced. The operator shall also verify that the guard is firmly attached to the grinder.

5.1.11. No grinding operation shall be carried out in the vicinity of flammable materials and all gas cylinders, hoses etc., shall be removed from the immediate area. Where this is impractical, the grinder shall take appropriate safety measure and shall enlist the help of another worker to monitor the activity to ensure that any stray park is immediately doused.

5.1.12. All personnel involved in grinding shall wear eye protection and gloves and shall take care not to perform any grinding in areas where other personnel are working. If it is unavoidable, the grinder shall ensure that they have been warned and are appropriately dressed. In any case, the direction of grinding must be such that the spark trail is directed away from personnel and equipment.

5.1.13. Following grinding, the grinder shall ensure that his machine is disconnected from the power source, stored with the cable neatly coiled and wiped clean of dust, dirt of grease. In addition, the grinder shall confirm that no stray park is left smoldering on any flammable surface.

### **Cutting**

5.1.14. Only properly trained personnel shall be allowed to use gas cutting equipment.

5.1.15. Particular attention must be paid to the maintenance of equipment and its proper use. On no account must grease or oil be used on cylinder valves or regulation valve on the torch, and neither should excessive force be used to open or close the valves. The supervisor shall ensure that all hoses and valves are fitted with flash back arrestor and that they are protected from damage by vehicles and equipment passing over them.





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5.1.16. When transporting gas cylinders, more than two 11 kg propane cylinder may be carried on a vehicle and they must be secured and kept upright to prevent accidental tipping. On no account must the cylinders be transported whilst still connected to hoses.

5.1.17. All gas cylinders, whether in use or not, shall be protected from the sun or any radiated heat.

5.1.18. When performing the cutting operation, the supervisor shall ensure that the operator is wearing the appropriate protective clothing and those protective goggles with a filter shade.

5.1.19. The operator shall ensure that no flame cutting is carried out near the flammable substances and shall also ensure that the flame and resulting spark stream are directed away from other personnel and equipment.

5.1.20. Any exposed cut surface shall be clearly marked as “HOT” upon completion of the operation.

5.1.21. As a final check, the operator shall ensure that any stray sparks are doused and are not left smoldering.

5.1.22. Once all cutting operation are completed, for example, at meal breaks or the day’s work is completed the supervisor shall ensure that the operator has closed the gas cylinder valves and has released any gas left in the hose and cutting torch.

### 5.2. Radiography

5.1.23. Radiological safety during the construction work is of paramount importance. Although non destructive testing is to be sub-contracted. The construction manger through his deputy, the Safety Officer and the Quality Control Manager shall satisfy himself that the NDT sub-contractor is fulfilling his obligations under the terms of Iran Atomic Energy Organization.

5.1.24. The following additional regulation shall be applied during the contract.



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## **Radiation**

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- ii) Dose Limits
- iii) Radiological Workers Classification
- iv) Radiological Workers Requirement
- v) Work Procedure
- vi) Sources and Control
- vii) Transport of Sources
- viii) Storage of Sources
- ix) Waste handling and Disposal

## **Guidelines**

All activities associated or involved with radioactive materials shall be performed in accordance with the company's procedures.

## **Dose Limits**

All exposures shall be kept as low as can be reasonably achievable and will not exceed the limits stated below.

The whole body dose equivalent shall not exceed 50 mSv (5 Rem) in any one year period.

The average annual dose equivalent shall not exceed 5 mSv (0.5 Rem).

## **Radiological Workers Classification**

Persons below 18 years of age shall not be involved in radiological work.



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Any persons who may be exposed to a dose equivalent to 5 mSv (0.5 Rem) shall be classified as a radiological worker (typically this includes radiographers and their assistants).

In addition, any person who may be exposed to radioactive emission levels in excess of 7.5 Sv/h (0.75 mRem/h), shall be closely monitored to ensure that the exposure does not exceed the annual dose limits.

### **Radiological Workers Requirements**

The names of all workers requiring classification shall be notified to the company at the time they commence employment

And also before they leave employment in this type of work.

Every radiological worker shall be full acquainted with the rules and regulations contained within this section of the procedure.

Every activity requiring the exposure or handling of radioactive sources shall be performed when two persons are present, with at least one of these being trained and qualified to an internationally acceptable standard for the work in which they are engaged.

All radiological workers shall be medically examined before commencing work and re-examined on an annual basis.

All radiological workers shall wear a personal film badge relevant to the type of radiation to which they may be exposed. These film badges are to be changed and sent for analysis on a monthly basis with the results of the analysis being advised to the company's representative, when requested.

Personal dose meters shall be worn by all radiological workers and a log kept of the readings. If a radiation exposure is suspected, then the film badge should be sent for analysis as soon as possible.



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During the handling of radiation sources a constant reading radiation meter shall be at hand.

### **Work procedures**

Any area where radiological work is regularly performed shall be walled off and has black and yellow trefoil warning signs posted outside it. No unauthorized personnel shall be allowed into the area. The maximum radiation levels outside the area shall be 2.5 Sv/h (0.25 mRem/h) and all non-classified personnel shall be kept out of this area.

### **Sources and Control**

Radioactive substances shall be kept in specifically designed containers with proper shielding, shutters and locks.

All radioactive substances and equipment in use or being stored on around the site shall be notified to the company's representative. The following information shall be supplied:

- ◆ Custodian company
- ◆ Reference number
- ◆ Type or radioactive substance
- ◆ Sealed or unsealed sources
- ◆ Nuclide (type of substances)
- ◆ Activity (becquerel or acruel)
- ◆ Date of receipt
- ◆ Storage locations
- ◆ Date of disposal
- ◆ method of disposal

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

X-ray equipment shall be registered and the following data submitted:

- ◆ Make and type
- ◆ Maximum tube voltage



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◆ Location and usage

Decay charts shall be kept for all sources with the classified persons using them.

The company shall maintain a record of the radiation levels emitted from the exterior of the container by having tests performed on and six months on alpha emitted sources with the first readings shall be taken in the event of the sources being damaged.

Inspection measurements shall also be taken on X-ray equipment at least annually.

A daily log shall be maintained for each source to show:

- ◆ Time out of storage
- ◆ Area of use
- ◆ Time returned to storage
- ◆ Name (s) of user

### **Transport of Sources**

Transport of sources shall be reduced to the practical minimum compatible with storage and control.

Source substances shall only be transported in properly designed transport containers which do not emit more than 0.1 Sv/h (10 mRem/h) at one meter from the source.

Any loss of a radioactive source shall be reported to the company engineer/representative and Safety Officer.

Personnel shall not travel in the same compartment of a vehicle as a radioactive source.

All radioactive sources being transported shall be so secured so that they can not be damaged or lost in transit.

All vehicles transporting radioactive sources shall:

- ◆ Display yellow and black trefoil signs entry to the compartment containing the source and at the front and rear of the vehicle.



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- ◆ display a fire proof warning notice front and rear stating the contact and telephone number of the company controlling it.
- ◆ carry a portable halon type fire extinguisher.
- ◆ not be left unattended.

Transport of radioactive substances shall be undertaken by a trained radiological worker who shall during the operation be wearing at all times his film badge and personal dose meter.

### **Storage of Sources**

Radioactive substances shall be stored in a locked underground pit from which radiation level shall not exceed 2.5 Sv/h (0.25 mRem/h).

The storage pit shall be located inside a securely fenced area with a lock. With the fence being at least 3 meters from the pit edge and the emission level outside the fence shall not exceed 1 Sv/h (0.1 mRem/h).

Yellow and black trefoil warning signs shall be displayed on all sides of the fenced area.

The storage area shall be located away from accommodation buildings and roads other than the access route to the store.

Source shall only be put into or removed from the pit by classified radiological workers.

X-Ray equipment shall not be left unattended if in operable condition and the X-Ray room or equipment shall be kept locked when not in use.

### **Waste Handling and Disposal**

Sealed sources shall be disposed off by returning to the supplier or an approved international radioactive waste disposal agency as agreed with the client.

Waste is considered radioactive as long as its activity is higher than 100 Bq per gram.

Detailed waste disposal shall be agreed with the client for each occurrence.

#### 5.3. Coating



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Because of the increased risk of fire, grinding as well as smoking cannot be allowed in the immediately vicinity when the painting coat is being applied.

5.3.1. Painter shall wear appropriate respiratory protection and personal protective equipment when applying coats of paint.

5.3.2. Air supplied face mask will be worn when entering enclosed space/voids in the pipe where an oxygen deficiency might be present.

5.3.3. No hot work is to be done unless the space is certified free of gas and flammable material.

5.3.4. Do not sit at pipe stacking areas.

5.3.5. Do not sit or stand under suspended load.

5.3.6. All work areas will be kept neat.

#### 5.4. Emergency Procedure

5.4.1. No evacuation for illness or injury can be done without approval of the Medical Assistant who will inform the Site Manager. The procedure will be as follows:

i) Step 1: Supervisor contacts by radio the Medical Assistant and give location and describe situation.

1. Accident/illness
2. Conscious/unconscious
3. Fracture evident/possible
4. Bleeding Yes/No
5. Breathing Yes/No

ii) Step 2: Medical Assistant gives instructions and drives the vehicles to the location.

iii) Step 3: Medical Assistant makes diagnosis and decision to medic or not.

iv) Step 4: If yes, contact Hospital (refer to telephone number list).



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v)Step 5: The Medical Assistant has to report by phone to the Site Manager. A letter of guarantee from the Relevant High Local Authority is necessary to have consultation and treatment in hospital for this reason, a copy of this letter must already be kept in the Medical Assistant's vehicle.

### 5.4.2. Injury/Illness

5.4.3. If you should become injured or ill report this condition to your supervisor immediately and to the first aid station for treatment.

5.4.4. An "Accident Report" form will be filled out and an accident investigation initiated by the Safety Officer for all industrial accident injury.

5.4.5. When assistance is needed for emergency treatment because of serious injury, the person requesting assistance must be sure to give definite location of the accident and type don injury to the ambulance driver/Medical Assistant to arrange for speedy evacuation to hospital.

### 5.5. Training For Safety

Training for Construction Manager, Superintendents and Supervisory staff.

5.5.1. The training of the above personnel has many objectives:

- i) Shows that Management is concerned with safety.
- ii) Ensure the Construction Manager and his Superintendents and Supervisor staffs understand their responsibility for safety.
- iii) Ensure that contractor and Sub-contractor's safety organization are understood.
- iv) Emphasizes positive feedback benefits to safety performances of those supervised.
- v)Explains accident statistics.

5.5.2. In house safety training program has the following headings:

- vi) Company Safety Policy/General Rules
- vii) Company Safety Statistics/Record/Safety Committee





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- viii) Hazard Reporting/Safety PUNCH LIST
- ix) INJURY/Reporting/Accident Report
- x) Personnel Protective Equipment
- xi) Vehicles and Driving Safety
- xii) Housekeeping
- xiii) Explosives and Blasting
- xiv) Fire Protection
- xv) Earthworks, Excavations
- xvi) Respiratory Equipment
- xvii) First Aid
- xviii) Electrical Safety
- xix) Use of Work Permit
- xx) Safety Incentive/Awards
- xxi) Emergency Procedure

5.5.3. It is the intention that our Construction Manager, Superintendents and Supervisory staff will follow this course during the mobilization phase and prior to be assigned to the construction site.


### 5.6. Health And Safety Training For Construction Personnel

#### 5.6.1. Prior To Recruitment

Our recruitment procedure calls for trade test and examination of the permits, licenses that may be necessary to qualify for certain works. Only those people showing their ability to work safely and having necessary permits. Licenses are selected.

### 5.7. Safety Incentive and Discipline

#### 5.7.1. General

|   |                             |               |                                      |
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This section defines how personnel are motivated to work safety and provide a voice in the design, implementation and control of the overall safety program.


### 5.7.2. Safety Awards

A safety award system has been introduced to give recognition to those employees who actively support the safety program. The system works as follows:

- i) Step One: Employees are advised that the safety award system is existing and special safety awards will be given to those who actively supports the safety program by following all safety rules, eliminate unsafe conditions or making an acceptable safety suggestion.
- ii) Step Two: If an employee corrects an unsafe condition that is not normally a responsibility of his job, or makes an acceptable safety suggestion to his supervisor or to the Safety Officer, the Safety Officer recommends this employee for a safety award.
- iii) The Safety Officer has wide discretion on this type of award and can recommend persons for award on any type of positive safety performances.
- iv) Step Three: The Construction Manager and Project Manager consider and accept or reject all recommendations for award.
- v) Step four: Awards made are accompanied by a letter of recognition from the Safety Manager.
- vi) Step five: The award could be a T-shirt, a watch or sport bag. The award is not money and is always something that can be seen by others. E.g., a photograph of the recipient must be posted on the safety and information notice board.

### 5.7.3. Discipline For Violations Of Safety Rules.

- i) On the other hand penalties are imposed on anyone, who by his action will endanger his life or the life of others, will be immediately dismissed without any payment of indemnities.
- ii) Supervisors will be informed of those people who are not wearing their protective equipment. Supervisor will ask the laborer to explain his fault. If the

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answer is not satisfactory a warning form will be filled and a copy will be kept in the personal file. If a second warning form is necessary, the laborers will be dismissed without any compensation.

## 5.8. Safety Statistic

5.8.1. The basic objectives for keeping detailed accident statistics are as follows:

- i) Allows comparison of the current accident rates against previous project rates or similar industry rates.
- ii) Indicates if trends are developing concerning the location of accidents.
- iii) Client's requests accident statistics and compliance to Government requirement.


5.8.2. The information is based on data taken from the accident report and the site medic records. The "Accidents Weekly Report" form allows a comparison of each week's performance.

5.8.3. The Safety Manager issues an annual report covering each year and guidelines for its format are as follows;


- i) Statistic Charts Showing:
  - ii) Locations of accident
  - iii) Injury causes
  - iv) Nature of injuries
  - v) Accidents by occupations.
  - vi) Comparable accident rates of similar industrial activities.
  - vii) Highlights of accident prevention activities.
  - viii) Accident prevention suggestions based on the past year's experience.

## 5.9. Safety Audit

Contractor will prepare and carry out regular safety audition site. Construction Manager for health and safety department will carry out safety audits anytime during the job.

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The objective is to improve the safety performance and accident prevention during the project. The results of these safety audits will be transmitted to the Project and Operation Manager.

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## APPENDIX 1

### CONTRACTOR BASIC SAFETY RULES

- I. Personnel Protective Equipment
- II. Tools/Equipment - Maintenance and repair Work
- III. Electrical Installations
- IV. Traffic
- V. Smoking
- VI. Radiography
- VII. Explosives
- VIII. Accidents
- IX. Health and Hygiene
- X. Acknowledgment

#### CONTRACTOR BASIC SAFETY RULES

All persons (employee, sub-contractors, visitors, clients) entering the work site area required to comply with the following basic safety rules.

##### **I. Personnel Protective Equipment**

- Safety helmet and safety footwear shall be worn
- Eye protection such as goggles, safety glasses, face shields are to be used when standing near grinders and welders.
- Contact lenses are not permitted for site work.

##### **II. Tools/Equipment-Maintenance and repair Work**



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- Only authorized operators shall operate cutting torches, cranes, winches, etc.
- Maintenance/repair work is only to be carried out by authorized maintenance personnel

### **III. Electrical Installations**

- Only authorized personnel with a valid permit can work on electrical appliances.

### **IV. Traffic**

- Only authorized personnel with a valid driving license can drive vehicles.
- Observe traffic signs and drive carefully.

### **V. Smoking**

- Not permitted in areas where NO SMOKING sign is posted, i.e., gas cylinder, petrol stations.

### **VI. Radiography**


- Do not stay in the area where Radiography work is being done.
- Observe the signals and warning signs.

### **VII. Explosives**

- Evacuate the area immediately when you hear or see the evacuation signal.

### **VIII. Accidents**

- Report any kind of accident or “near miss” you have seen to the supervisor and safety officer.
- Do not move an injured person before the arrival of medical assistance or a qualified first-aid person, unless you know for sure that the injured person does not have a fracture to the spine or, is suffering from internal injuries.

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## IX. Health And Hygiene

- Good house keeping must be observed in all areas.
- Long hair is prohibited if working near rotating machinery or a source of ignition.

These are the minimum requirements for safety.

If you are the minimum requirements for safety.

If you think “safety first” you will be safe and you will not bring sadness to your family.

Please sign the attached acknowledgment slip.

## X. Acknowledgment

the undersign, have been given a copy contractor Basic Safety Rules and have read and fully understood these rules. I agree to abide by these rules as a condition of employment with contractor.

Name :

Employee No. :

Employee’s Signature :


Witness to the above :

Signature :

Date :

### 5.8.4. Safety Training Upon Recruitment

- i) Health and Safety Training is given upon arrival in site to all personnel with proper safety equipment. Boards, videos and procedures.

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- ii) Specific Safety Training is given to all trades where special risks linked to the work to be carried out exist.
- iii) This will concern people such as operators, grinders, pipe-fitters, welders, drillers, blasters, electricians, etc.
- iv) During Construction Period
  - 1) Safety training sessions are organized on a regular basis by the Safety Officer for all personnel.
  - 2) Specific sessions are also organized on specific topics for all those concerned by such topics.