

# Dubai Supply Authority



## HSE GUIDELINES for CONTRACTORS

<b>Summary of Significant Changes</b>	<b>Modified By: (Name)</b>	<b>Date</b>
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### **INTRODUCTION**

The Dubai Supply Authority (DUSUP) has a responsibility to protect workers from personal injury and health hazards. To meet this responsibility DUSUP will operate under the following guiding principles:

#### **Responsibility**

Safety is the responsibility of all managers, supervisors, employees, contractors, sub-contractors and suppliers. DUSUP recognizes its leadership role in influencing work site situations in promoting safety awareness and safe work practices by all parties.

#### **Priority**

Work will be conducted on the basis that safety of all personnel is of vital importance, whether those personnel are employed by DUSUP, a contractor, a sub-contractor or a supplier.

#### **Accountability**

DUSUP and Contractor Managers and Supervisors will be held accountable for the safety performance of their unit.

#### **Improvement**

DUSUP, with the co-operation and involvement of its employees and contractors, will promote methods and procedures that have the potential for improving safety performance.

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**1.0 SAFETY PROGRAM**

- 1.01 All work will conform to this DUSUP guideline and the Dubai Supply Authority Safety Standard Manual.
- 1.02 DUSUP requires that all contractors and their workers to place the highest priority on health and safety in all working conditions.
- 1.03 Construction worker safety requirements can be summarized in four sentences:
  - Each worker must be made aware of their responsibility for planning and working safely.
  - Proper safety protection must be provided to the workers, as well as proper safety equipment.
  - Workers must wear the correct personal protective equipment and work safely.
  - All construction accidents can be prevented.

**1.1 Compliance with Safety Program**

- 1.1.1 Strict compliance to DUSUP and contractor safety programs is necessary to prevent accidents, injuries, property/environmental damage and the personal hardships that accompany them. It is for this reason DUSUP requires all workers to accept and follow these safety rules/practices as a condition of employment on the construction site.
- 1.1.2 A worker who does not practice safety endangers other workers, the public and him or herself. Unsafe practices are also inefficient. It pays to be alert at all times. An accident can handicap you for life and bring unhappiness and hardship.
- 1.1.3 Familiarize yourself with the safety organization on the project site. Know how to locate the First Aid Services, enact the emergency reporting procedures and make contact with your supervisor.
- 1.1.4 Read the Safety Bulletins and Directives/Reports issued by your supervisors.
- 1.1.5 It is your responsibility to immediately report to your supervisor, all unsafe and hazardous conditions or action you see on the job.

**1.2 Rules, Regulations and Laws**

1.2.1 All applicable Government acts, regulations, laws and codes shall be followed including licensing of applicable workers, inspection and certification of equipment.

1.2.2 Should any conflict arise between the above and this guideline, the most stringent will apply.

**1.3 Responsibility and Authority**

1.3.1 Contractors and sub-contractors must provide a safe and healthy working environment through active leadership and support of occupational health, safety, fire prevention and security programs, while paying due regard to the protection of the environment. The contractor shall also ensure workers are aware of their responsibilities under acts and regulations and the information in this handbook. The contractor will be held accountable for the enforcement of all regulations.

**1.4 Training in Safety**

1.4.1 The contractor is responsible for ensuring all employees are trained in accordance with safety regulations and applicable professional/vocational requirements.

1.4.2 Technical training to ensure job proficiency must identify all the safety hazards associated with the specific job function.

**1.5 Safety Meetings**

1.5.1 Safety meetings alert workers to potential hazards in the workplace, Company policy, safe work practices and procedures. Types of safety meetings include:

- Daily toolbox meetings at the start of each shift
- Weekly progress reviews at which safety is a priority item
- Safety training meetings

**1.6 Safe Work Permits**

1.6.1 Safe Work Permits document and evaluate:

- The performance of specific work in a designated area
- Potential safety hazards or conditions

- Risk assessments or other evaluations required
- Other services in the work area
- Required safety equipment and personal protective equipment

1.6.2 Safe Work Permits are required for:

- Any work inside the designated area at any DUSUP facility, such as the DUSUP Gas Control Station (GCS)
- “Hot Work” in the vicinity of flammable or explosive items
- Excavation
- Entry into confined space
- Hot tap
- Open process piping
- Working on electrical or electronic equipment which is “live”
- Use of hazardous materials, e.g. explosives

1.6.3 In addition, a Hot Work Permit is required on equipment in service for work of the following nature:

- Welding or burning
- Operating portable grinders, powered wire brushes, sand blasting equipment and non-explosive proof electric tools
- Vehicle entry to tank farm or classified area
- Operation of equipment which could be a source of ignition for vapors or flammable materials

1.6.4 The DUSUP permit to Work System can only be used by trained and competent personnel. For contractor personnel to be designated as Performing Authority under the permit to work system they must be trained and have passed the competency test. In all other cases a DUSUP person will be the Performing Authority to supervise the work.

### 1.7 **Worksite Inspections**

1.7.1 Worksite safety inspections are an effective and proven method of measuring and evaluating safety performance. They may range from a supervisor making notations in a daily log to a formal process involving safety personnel or several levels of supervision.

**1.8 Accident/Incident Investigation**

- 1.8.1 Contractors (including their sub-contractors) are required to investigate and submit an Incident Report (either on their own form or on the DUSUP form) for all incidents including but not limited to Fatality, Medical Treatment, Recordable or Lost Time Injuries and damage to contractor or project property, equipment or materials.
- 1.8.2 Additionally, significant first aid cases and near misses shall be investigated. A rule of thumb is that if under slightly different circumstances, the incident could have resulted in a serious injury or loss, it should be investigated. For example, a lifting gear failure that resulted in no injury or loss could have easily resulted in a fatality under slightly different circumstances and must be thoroughly investigated.
- 1.8.3 To prevent the possibility of an accident/incident recurrence, DUSUP may help to thoroughly investigate the incident, obtain statement(s) from witness(es), determine the direct and basic causes for the incident and document clear, constructive recommendations for corrective action.
- 1.8.4 In all cases, an accident/incident investigation is a learning experience which results from mistakes within the organization. Your full cooperation is appreciated.
- 1.8.5 All accidents/incidents that result in or have the potential of causing injury or property damage must be reported to your supervisor and to DUSUP safety representative immediately, followed by a documented incident report within 24 hours.
- 1.8.6 In accidents that require the injured person to be transported to Rashid Hospital, the nearest Police Station must be notified.

**2.0 PERSONAL CONDUCT**

- 2.0.1 The contractor is responsible for the conduct of those persons in his employ, including sub-contractors and their employees.
- 2.0.2 Cigarettes, smoking, matches, lighters etc. are not allowed inside a fenced project area or plant facility.
- 2.0.3 Gambling, fighting, loitering, sleeping or stealing will not be tolerated on any company site at any time.

- 2.0.4 Workers shall not be in possession of alcoholic beverages, illegal or non-prescribed drugs or narcotics nor be under the influence of the same on the job site. Such possession, use or distribution is “Gross Misconduct” and shall result in exclusion from the site, and reported to the nearest Police Station.
- 2.0.5 Water coolers will not be used for any other purpose than that for which they were provided (for example, cooling or storage of non-alcoholic beverages).

### **3.0 PERSONAL PROTECTIVE EQUIPMENT/CLOTHING**

#### **3.1 Head Protection**

- 3.1.1 Approved non-metallic hard hats must be worn on the plant or construction site.
- 3.1.2 Hard hats are not required inside vehicles, offices or operating equipment with roll over protection.
- 3.1.3 Welders must wear a combination hard hat and welding shield that meets approved standards when welding.

#### **3.2 Eye Protection**

- 3.2.1 Industrial eye and/or face protectors, meeting approved requirements, must be worn where conditions warrant. These offer protection against the hazardous activities as outlined in attached Eye and Face Protection table.
- 3.2.2 Persons wearing non-safety prescription glasses may wear approved mono-goggles.
- 3.2.3 Contact lenses are not recommended onsite. If worn, identification for the individual is mandatory.
- 3.2.4 When performing arc welding and the arc may endanger the sight of other workers, the contractor must provide protective flash screens and the worker must wear appropriate dark safety glasses.

**Note:** Spectacle type protectors should be properly chosen, fitted and maintained if they are to safeguard the user. Indiscriminate issuance to all workers should be avoided.

#### **3.3 Hearing Protection**



3.3.1 Workers must be protected from noise levels exceeding the exposure limits adopted by the DUSUP Industrial Hygiene Program.

3.3.2 Hearing protection such as disposable ear plugs or muffs must be worn in areas of high noise levels such as:

- Hearing Protection posted areas
- Operation of jack hammers, tampers
- Operation of chipping hammers in tanks, vessels, etc.
- On or adjacent to heavy equipment
- Grinding
- Where you cannot hear someone talking to you because of the surrounding noise

### 3.4 **Hand Protection**

3.4.1 Heavy work gloves must worn when handling hot, sharp, rough or splintered materials.

3.4.2 Chemical resistant gloves must be worn when working with chemicals, solvents or cements.

3.4.3 Dielectric gloves must be worn when the worker is exposed to energized electrical panels and circuits.

### 3.5 **Foot Protection**

3.5.1 All persons on a plant or construction site must wear approved safety shoes or boots. Persons working in offices are not required to wear safety shoes.

### 3.6 **Clothing Requirements**

3.6.1 Rings or jewelry that may create a hazard to the worker shall not be worn.

## 4.0 **EMERGENCY PROCEDURES**

4.1 The person sounding an alarm must report the location, the nature of the emergency, identify any known injuries and remain at that station until emergency help arrives.

4.2 The contractor's fire extinguishers shall be used to provide initial fire fighting response and security must be notified immediately.

- 4.3 Safe Muster Points must be identified for each work site and reviewed with workers.
- 4.4 Immediate Emergency Response Guidelines.
- Provide first aid to injured personnel and prevent further injuries.
  - Protection of life is the highest priority.
  - Initiate corrective action required by the nature of the emergency to prevent further injury or damage.
  - Summon assistance.
  - Notify your supervisor.

## **5.0 SAFETY EQUIPMENT**

### **5.1 Safety Belts/Lifelines**

- 5.1.1 Full Body Harness and lifelines or fall arresting devices must be worn and used when working at heights over 2 meters (6' 6") when a guardrail or other protection is not provided for temporary installations.
- 5.1.2 Full Body Harness and independent lifelines are required when working on any rigged floats, swing stage, scaffolds or boatswain's chair.

### **5.2 Respiratory Protection**

- 5.2.1 Appropriate respiratory protection, meeting approved requirements of DUSUP IH Program, such as dust masks or chemical cartridges shall be worn when required by work conditions. No person shall enter a vessel or any confined space unless it has been ventilated and tested for sufficient fresh air or supplied air breathing apparatus is worn.
- 5.2.2 Filter masks are not to be used in areas containing toxic material or vapor or in oxygen deficient enclosures. i.e. H<sub>2</sub>S areas.
- 5.2.3 No worker shall wear a respiratory protective device or respirator until they are familiar with their employer's code of practice.
- 5.2.4 The contractor shall ensure all required respiratory protection and associated equipment is readily available to the worker and maintained in good working order and sanitary condition.

### **5.3 Barricades, Warning Lights, Flags**

- 5.3.1 Contractors must provide adequate barricades, covers, guard rails, signals, flagmen or other appropriate devices to protect workers near excavations and openings. They must be erected/provided before the job is started or extended.
- 5.3.2 Where guard rails or barricades do not provide adequate protection, temporary covers shall be firmly fastened in position over the openings to prevent accidental displacement.
- 5.3.3 Warning signs indicating open ditch or trench are to be conspicuously posted in these areas.
- 5.3.4 Barricades shall be painted to ensure maximum visibility and indicate contractor ownership.

## **6.0 SECURITY/IDENTIFICATION/MOBILE PHONES**

- 6.1 All workers will be given a DUSUP safety orientation. The employees gate pass identification card must be in the person's possession at all times while onsite.
- 6.2 Access to and exit from site will be controlled by security personnel at all times.
- 6.3 No worker shall enter into any part of the construction site to which they have not been assigned or specifically instructed to enter e.g. general sight seeing, for curiosity, for reasons of short cut from one area to another.
- 6.4 Cameras are not permitted on the project without prior approval by management.
- 6.5 Mobile Phones are not allowed to be carried in hazardous areas; you will be informed of restrictions on mobile phone use during the site induction for the particular site you are working on.
- 6.6 All persons must use established access/egress routes at all times.
- 6.7 The Project Manager will advise contractor if vehicle passes are required on a site by site basis. If required, the Project Manager will advise contractor how to obtain them.
- 6.8 Vehicle pass stickers must be displayed in the lower windshield on the drivers side.
- 6.9 All visitors, contractors and supplier representatives must park their vehicles in the visitor parking lot and report to Security. They will be picked up at security by a Contractor's Supervisor and remain with that supervisor until being

returned to Security. All visitors, etc. will be issued a temporary pass which must be returned to Security when leaving the site.

6.10 Contractors are responsible to ensure company and personal equipment and tools are properly identified and secured from theft.

6.11 Outgoing shipments of all materials, tools, equipment, etc. must be accompanied by a Materials Gate Pass signed by the contractor and a company supervisor.

6.12 Clearly marked means:

- Equipment and tools engraved with the company name (along with any other unique company identification, information or numbering system).
- Equipment and tools painted and having company identification clearly marked (i.e. stickers or fixed tags).

## **7.0 HOUSEKEEPING, HEALTH AND SANITATION**

### **7.1 Jobsite Housekeeping and Orderliness**

- Maintain clear access to walkways, roadway, fire and rescue equipment and electrical disconnects
- Eliminate tripping and slipping hazards
- Eliminate fire hazards by keeping accumulated trash, oily rags and combustible materials in covered metal containers clearly labeled for the storage of waste materials.
- Keep worksite materials and equipment stored in their proper place.

### **7.2 Storage Locations**

7.2.1 Only company approved areas may be used for material and equipment storage, trailers, temporary buildings and fuel depot locations.

### **7.3 Scrap and Surplus Removal**

7.3.1 The contractor will remove scrap material from the worksite and trailer area to an offsite disposal site regularly.

7.3.2 All materials leaving the site require a Material Gate Pass.

7.3.3 No material shall be disposed into plant sewers, surface drainage systems or unauthorized offsite disposal areas.

**7.4 Temporary Lighting**

- 7.4.1 Temporary lighting used in damp and/or hazardous locations must be approved and intrinsically safe.
- 7.4.2 Temporary lighting must have guards over the bulbs. Broken and burned out lamps must be replaced immediately.

**8.0 FIRE PROTECTION****8.1 Fire Extinguishers**

- 8.1.1 In general, a minimum of one (1) 10 lb ABC fire extinguisher will be required in each office or other building and on all contractor vehicles or engine driven machines. Supply vehicles and supervisor's pick-up may use (1) 5 lb ABC fire extinguisher.
- 8.1.2 Welding machines shall have a minimum of one 20 lb ABC extinguisher for placement/use within 3 meters of the work area where welding is performed.
- 8.1.3 Contractors must ensure employees receive instruction in the operation of fire extinguishers.

**8.2 Access to Fire Protection Equipment**

- 8.2.1 Fire hydrants, extinguishers, hose racks and other emergency equipment shall not be covered or blocked. Fire equipment lanes must always be kept clear except where permission has been granted by the company representative.

**8.3 Temporary Buildings**

- 8.3.1 Contractor's temporary construction building and facilities are subject to company standards that will be advised by the Project Manager.

**8.4 Tarpaulins and Fire Blankets**

- 8.4.1 All tarpaulins used on the site must be fire resistant.
- 8.4.2 The use of polyethylene tarpaulins is acceptable when approved for specific use. No polyethylene tarpaulin shall be used where a minimum distance of one meter cannot be maintained from any source of ignition and shall not be in the direct line of air flow from a fan.
- 8.4.3 Six mil polyethylene sheets may be used in areas remote from a source of ignition for weather protection of personnel and materials.

Adequate access/egress and ventilation shall be provided at all times in enclosed areas.

8.4.4 Heavy wool fire blankets shall be used beneath and/or adjacent to any welding operation where persons, equipment and/or combustible material may be affected by sparks or slag.

8.4.5 Asbestos blankets are not permitted due to the health hazard.

#### **8.5 Welding and Torch Cutting**

8.5.1 All welding or cutting operations must be performed in a safe manner to prevent injury to personnel and loss of property. Only competent workers are allowed to use oxygen/acetylene equipment.

8.5.2 Special care must be taken during overhead welding operations to safeguard personnel and prevent falling sparks from starting a fire. The requirement for a “fire safety watch” must be noted in the job specification or instruction.

8.5.3 Welding rod cabinets presenting a fire or safety hazard will not be permitted. Cabinets of fireproof materials equipped with trip heaters are recommended. Metal cabinets must be grounded in an approved manner.

8.5.4 Welding or cutting torches and hoses must be disconnected from any cylinders and the cylinder caps re-installed when not in use. If this equipment is to be unattended for more than 45 minutes, all cylinder valves must be closed and hoses depressurized.

8.5.5 All welding cable not in use must be rolled up and properly stored.

8.5.6 Regulators and hoses must be equipped with flashback arrestors and check valves.

#### **8.6 Cylinder Handling and Storage**

8.6.1 All compressed gas cylinders shall be transported and stored in such a manner as to prevent personal injury, property loss and uncontrolled movement.

8.6.2 All portable cylinders shall be stored in an upright position, be secured and protected against external damage and have the protective cap placed over the cylinder valve (when not in use).

- 8.6.3 All oxygen/acetylene cylinders should be mounted on a standard mobile cart designed for this purpose when being moved or used.
- 8.6.4 When compressed gas cylinders are lifted by hoisting equipment or basket, a cradle or similar handling device must be used. Slings or magnets will not be allowed. Cylinders must not be lifted by the valve or valve protection caps.
- 8.6.5 No gas cylinders shall be transported inside the vehicle except for breathing air. These shall be secured to the inside vehicle.
- 8.6.6 If a cylinder catches fire and cannot be extinguished properly, a stream of water should be sprayed on it to keep the cylinder cool to prevent rupturing while the fuel is burning out.

### **8.7 Fuel Storage and Dispensing**

- 8.7.1 Fuel storage tanks must be grounded. Filler hoses must be bonded from the tank to the dispensing nozzle. Vehicles dispensing fuel and the fuel tanks must have a static ground attached to the unit being fuelled. The ground must be attached prior to any refuel operation.
- 8.7.2 Storage tanks must be clearly identified with the type of fuel, contractor's name, emergency telephone number.
- 8.7.3 A quick closing shut-off valve is required on the dispensing end of fuel hoses. Siphoning of fuel is not allowed.
- 8.7.4 All motor vehicles, gasoline or diesel engine driven equipment must not be refueled while the engine is running.
- 8.7.5 Gasoline and fuel should be dispensed through a pump and hose or, as with other portable quantities of flammable liquids, through a container meeting approved standards.
- 8.7.6 Smoking is not permitted near gasoline storage areas. A sign stating "No Smoking or Open Flame" must be visibly posted in the vicinity of the storage area.

### **8.8 Volatile Materials/Controlled Products**

- 8.8.1 Adequate ventilation must be provided when cleaning agents and other volatile materials are being used.
- 8.8.2 Flammable volatile materials must not be applied near an open flame. If such material is to be applied in a vessel or other poorly ventilated,

confined area, only explosion proof lights or connections will be used and must be noted in the Safe Work Permit for confined space.

- 8.8.3 Flammable and toxic materials shall only be stored in containers approved for holding such materials.

## 8.9 **Chemicals**

- 8.9.1 An inventory of all chemicals must be provided to the Project Manager prior to arrival on site. The inventory will include name, quantity, location and the appropriate MSDS for each and every chemical.
- 8.9.2 For new chemicals brought on site during the project prior notification and approval from the company representative must be received prior to arrival.
- 8.9.3 MSDS sheets will be kept in a location that makes them available in an emergency to the personnel handling the chemical.

## 9.0 **MOTOR VEHICLE/TRAFFIC/POWERED MOBILE EQUIPMENT**

### 9.1 **Traffic Rules and Signs**

- 9.1.1 All personnel operating vehicles must comply with all rules and signs regarding traffic and vehicles and hold a valid U.A.E. driver's licence.
- 9.1.2 Only trained and licensed operators are permitted to operate fork lifts, road graders, dozers, loaders, cranes and other heavy equipment.
- 9.1.3 Vehicles must never park behind heavy equipment.
- 9.1.4 The operators of all vehicles and equipment must be constantly aware of pedestrian movements and grant pedestrians the right of way at all times.
- 9.1.5 Vehicles are to be driven under control at all times, and not to exceed the posted maximum speed limit.
- 9.1.6 When backing up in congested areas or limited quarters, use a person to guide. Due care must be exercised by all equipment backing up.
- 9.1.7 Sleeping or resting under parked vehicles or equipment is strictly prohibited.

### 9.2 **Mechanical Condition**



- 9.2.1 All equipment and vehicles must be in a safe mechanical condition at all times. Drivers/operators are responsible for the immediate reporting of any defects to their supervisor.
- 9.2.2 All vehicle and mobile equipment must be equipped with back-up alarms. An occasional vehicle not so equipped must sound its horn twice before backing-up.
- 9.2.3 Motorized equipment must not be left running and unattended for any reason during a prolonged absence of the operator from the equipment (i.e. lunch). The engine must be shut down and the key removed from the ignition. This includes trucks, welding machines, trenching equipment, backhoes, gas tampers, etc. Unique exceptions may be made.

### 9.3 **Transportation of Personnel**

- 9.3.1 A maximum of three (3) people, including the driver, are permitted to ride in the cab of pick-up vehicles, provided there are seat belts for all three occupants.
- 9.3.2 All occupants of vehicles must wear seat belts except where exempt by law.
- 9.3.3 Personnel may be transported in the back of a pick-up provided they are seated on securely fastened seats, wearing seat belts and protected from the weather.
- 9.3.4 Riding on equipment not specifically designed with a “man-platform” (i.e. Picker, ball of crane), and/or getting on or off moving equipment or vehicles will be cause for immediate dismissal.

### 9.4 **Obstruction Roads**

- 9.4.1 Approval to cut or obstruct site or plant roads must be obtained from the Project Manager.

### 9.5 **Oversize/Overweight Loads**

- 9.5.1 Equipment which exceeds the legal highway load limit or would require a permit to operate on highways must meet the following requirements:
  - Notice of arrival at site must be given to the Project Supervisor at least 48 hours in advance.

- The Project Supervisor will determine the route to be used and time of travel.
- When the equipment must travel over any buried service, ditch or road, mats or planking may be requested by the Project Supervisor.
- A flag person or persons, wearing high visibility vests, must be provided for all high, wide or long loads while travelling through the site.

#### 9.6 **Swinging Loads**

9.6.1 Swinging loads or mobile equipment must be tag lined to prevent excess swing or otherwise tied back to the vehicle.

#### 9.7 **Electrical Hazards**

9.7.1 No powered mobile equipment shall be operated or located within 3 metres (10 feet) of power lines. Operation within this distance requires a Safe Work Permit and/or isolation.

### 10.0 **HOISTS AND CRANES**

#### 10.1 **General**

- 10.1.1 Inspect all hooks, slings, shackles, chokers, ropes and cables for cuts and abrasions before using. Only certified lifting equipment will be accepted for use.
- 10.1.2 Chains are not to be used for lifting operations.
- 10.1.3 Slings over 2.5 cm (1 inch) wide must have a load rating affixed to the device by a stamp or color code.
- 10.1.4 Wire ropes and slings shall be kept free of rust and discarded when damaged beyond the manufacturer's recommendations.
- 10.1.5 All lifting hooks must be equipped with a functioning safety latch.
- 10.1.6 Keep hands clear of loads and if practical secure the load with tag lines from ground level to prevent any swinging or rotation.
- 10.1.7 Keep out from under loads, do not position yourself where swinging load can trap you, use long tag lines.
- 10.1.8 Shake-out or sorting hooks are only to be used for sorting structural steel, pipe and other materials at ground level and not for hoisting operations.

- 10.1.9 Report all unsafe conditions to your supervisor immediately.
- 10.1.10 All loads shall be inspected by the assigned operator at ground level immediately prior to hoisting any personnel or equipment.
- 10.1.11 All cranes used to hoist personnel must be equipped with friction drums (power down).
- 10.1.12 All lifting devices or man baskets must be certified by a professional engineer. The load rating and certification number must be permanently affixed to the man basket and a bypass choker used on the lift line. Safety belts must be used by all occupants of the man basket.
- 10.1.13 Cranes shall be operated with the outriggers extended on pads.
- 10.1.14 Barricades must be provided to guard against personnel entering the swing radius area.
- 10.1.15 A competent signal person must be in full view of the crane operator and shall be present whenever a lift is made. The signal person shall wear a high visibility vest at all times when directing the movement of any crane.
- 10.1.16 A signal person must direct the operators with standard crane and hoist signals.
- 10.1.17 When moving a crane, a competent rigger/walker must be stationed to direct the operator.
- 10.1.18 Crane operators must be competent with appropriate certification.

## 10.2 **Inspection**

- 10.2.1 All cranes must have a certificate of inspection not more than 12 months old when they arrive at site. A copy of this certificate must be given to company when the equipment arrives at the site. A copy must be carried in the crane and presented upon request. Conventional cranes must be certified onsite after assembly and prior to the start of any work. Cranes continuously onsite must be re-certified every twelve (12) months.
- 10.2.2 Certificates must contain the following numbered sections of booms and configurations used: crane number, make, model, capacity, types of defects found (if any), method of repair, type of inspection carried

out, date of inspection and signature of the qualified person doing the inspection.

### 10.3 **Lifting Plan**

10.3.1 When any of the following conditions exist, the contractor shall complete a lifting plan and submit in writing an outline of the safety planning for the lift to company 48 hours prior to the start of the lift:

- Load exceeds 90 tons.
- Any time a lift is made within 3 meters of or above power lines.
- Two cranes are required simultaneously to make the lift.
- Lifts of a complex or unusual nature (i.e. Sky-Derrick).

### 10.4 **Log Books**

10.4.1 The contractor shall maintain a log book for each crane, derrick or other hoist operating at the work site.

10.4.2 The operator will record with the time, date and signature, items such as inspections, defects, repairs, wire rope sizes, rigging information, operating hours and the date of last calibration of the load weight indicator (gauge).

## 11. **TOOLS AND MACHINERY**

### 11.1 **Factor of Safety**

11.1.1 The safe design capacity of any tool or piece of equipment must not be exceeded. Tools and equipment must not be modified in any manner that reduces the original factor of safety or capacity.

11.1.2 Equipment must be inspected by the contractor's supervisor prior to its use on a job and periodically thereafter to ensure it is in a safe working condition.

11.1.3 Under no circumstances shall workers use inadequate tools or equipment. Defective tools and equipment must be tagged and removed from service immediately. Failure to do so will be considered a serious safety violation.

### 11.2 **Guards/Cutting-Grinding Discs**

11.2.1 The maximum design rpm of a cutting or grinding disc must not be exceeded.

11.2.2 Cutting discs must not be used for grinding.

### 11.3 **Electrical Tools-Grounding**

11.3.1 Portable electrical equipment and extension cords must be the standard three wire grounding type unless the tools are internally grounded.

11.3.2 Extension cords must meet or exceed the National Electric Code requirements for industrial/construction use and be so labeled.

11.3.3 Certain test equipment such as oscilloscopes, vacuum tubes, volt meters and signal generators, as well as certain areas where exposed direct current (DC) equipment is used, do not require grounding and proper operational procedures must be ascertained from the manufacturer.

### 11.4 **Explosive Actuated or Assisted Tools**

11.4.1 Tools using explosive charges may only be used by trained authorized personnel.

### 11.5 **Hoses and Connectors**

11.5.1 Hoses, connectors and adaptors must be of standard manufacture and used only for the type of service intended, i.e. air or water hoses must not be used in steam service.

11.5.2 In order to ensure positive locking at all times, connectors must be in good condition and not abused. Air and sandblast hose connections shall be equipped with approved safety lock fittings which prevent accidental disengagement. Quick lock Chicago fittings may be used in air or water service, but must be wired to prevent accidental uncoupling.

11.5.3 Air pressure or pneumatic tools must be held down before tools are disconnected from the air supply.

### 11.6 **Pressure Vessels - Testing**

11.6.1 As a minimum, all contractor owned or leased pressure vessels, including boilers, used onsite must receive an annual hydrostatic test equal to 1.5 times the maximum allowable working pressure of the unit

as well as undergo a thorough visual examination. At this time, safety and relief valves must be checked. The certificate or equivalent must be displayed at all times. Written certification of compliance to this procedure must be furnished to company representative upon first arrival of equipment at the site and annually thereafter.

## **12.0 CONSTRUCTION PRACTICES**

### **12.1 Excavations/Trenching Clearance Standards**

- 12.1.1 Any trench or excavation greater than 1.1 meter (3'3") must be properly supported or sloped and have adequate access ladders positioned (maximum 15 meters or 50 feet apart) prior to entry by personnel.
- 12.1.2 In all cases, proper signs and barricades are to be installed.
- 12.1.3 In the event a contractor performs work which exposes any existing underground facility that is not indicated on the drawings or Work Permit, the contractor shall stop all work immediately adjacent to the work site and notify the company representative.

### **12.2 Use of Ladders**

- 12.2.1 Portable ladders must comply with an approved standard.
- 12.2.2 Ladders must be inspected before use. Damaged, bent or broken ladders shall not be used and must be removed from the jobsite. Temporary repairs are not permitted.
- 12.2.3 The length of ladders must be sufficient to reach the working height and if extending past a landing, roof or platform, the extension must be at least 1 meter (3' 3").
- 12.2.4 The base of the ladder must be placed no further from the base of the wall or structure than one quarter of the length of the ladder, measured from the point at which the ladder contacts the wall or structure. The front section of an open step ladder is to be no steeper than a ratio of 5.1.
- 12.2.5 Workers must face the ladder when climbing; not more than one person may use the ladder at a time. Personnel shall not stand on the top two rungs of the ladder.
- 12.2.6 Metal ladders and metal reinforced ladders may not be used for any work with electrical installation which could possibly be energized.

12.2.7 Ladders may not to be used to support work platforms.

12.2.8 Ladders must be secured by “tie-off” or be held at the bottom by a person to prevent slipping when in use.

### 12.3 **Use of Scaffolds/Platforms**

#### 12.3.1 **General**

- Access to scaffold should be by outriggered platform with a safety barrier protecting this area from the main work area. Unprotected access holes are not acceptable.
- Scaffolds shall be designed and constructed with the proper accessories made specifically for each type of scaffold as designed by the manufacturer.
- Scaffolds and associated equipment must be inspected regularly and maintained in good repair.
- Scaffolds must be inspected and tagged “green” prior to use.
- Workers must not allow tools, materials or debris to accumulate on the work surface.
- Tag lines are to be used when hoisting materials. Scaffolds are not to be moved while workers are on them.
- Adequate containers must be used to safely store and lower waste materials i.e. welding rod ends.
- Safety measures must be taken to protect persons at ground level, including roping off the worksite and posting warning signs. If conditions justify, a safety watch shall be stationed to warn people in the vicinity.
- Climbing on or working from makeshift supports or platforms such as boxes, crates or drums is not permitted.

### 12.4 **Fasteners and Bracing**

12.4.1 All parts of metal scaffolding shall be securely fastened together with metal pins or clamps designed for and manufactured for this purpose. No wire is allowed in lieu of metal parts.

12.4.2 Vertical diagonal cross bracing must be installed in each scaffold panel.

- 12.4.3 Horizontal diagonals shall be installed on the bottom lift and every 6 metres (20 feet) thereafter.
- 12.4.4 Scaffold planks must be 33 x 240 mm fir or material of equivalent or greater strength. Planking must be inspected and tested by an experienced worker.
- 12.4.5 Scaffold planks must be secured to prevent accidental movement.

## 12.5 **Guardrails**

- 12.5.1 Guardrails should be installed around the perimeter of all platforms (greater than 2 meters or 6'6" in the case of a temporary structure) and shall consist of a top and intermediate rail.
- 12.5.2 Guardrails must be secured to vertical uprights spaced at a maximum of 3 meters (10 feet) centre to centre and must consist of a horizontal top rail not less than 90 cm (35 inches), no more than 100 cm (39 inches) in height with an intermediate rail evenly spaced between the top rails and the base.
- 12.5.3 Wire cable or rope will not be accepted on scaffolds as a substitute for guardrails.

## 12.6 **Toe boards**

- 12.6.1 Every temporary scaffold or work platform where it is possible for material to fall more than 2 meters (6'6") must have toe boards installed around the perimeter.

## 12.7 **Confined Space Entry Standard**

- 12.7.1 A confined space is an enclosed or partially enclosed space with restricted access and egress, where the atmosphere may be or may become contaminated. This is hazardous to a worker as it restricts both his escape and the entry of a rescue in the event of an emergency.
- 12.7.2 A Confined Space Entry permit must be obtained before commencing work in confined spaces describing that due to design, construction location or atmosphere, the materials or substances in it may become hazardous to a worker.



12.7.3 The permit issued is to ensure adequate ventilation will be provided to remove harmful gases, vapors, mists or dust and to maintain a breathing atmosphere of 19.5 to 22% oxygen by volume. Periodic atmospheric testing may be necessary.

12.7.4 The contractor is to have a safety watch and rescue procedures in place to effect the immediate removal of a stricken worker.

## **12.8 Radiation**

12.8.1 The use of radioactive material is strictly controlled. A Standard Operating Procedure (SOP) exists and all conditions required by the document must be met prior to radioactive materials being brought on site.

12.8.2 Contractors using radioactive materials must register with the Project Manager and complete a Cold Work Permit and obtain appropriate authorizations prior to starting any radiography.

12.8.3 Contractor must rope off the area where its work is to be done and post warning signs indicating radioactive testing is in progress.

12.8.4 Contractors must try to schedule radiography testing in evenings and off-shifts to minimize the exposure of workers.

12.8.4 The use and handling of radioactive materials shall conform to the Code of Practice for the Control and Safe Handling of Sealed Radioactive Sources used in Industrial Radiography.

12.8.5 Only under unique circumstances will permission be granted to store radioactive sources onsite overnight.

## **12.9 Sandblasting**

12.9.1 Sandblasting operations shall be carried out in accordance with Dubai Safety Regulations. Contractor shall supply the safety equipment required to meet the standards.

## **12.10 Painting**

12.10.1 Painters must observe proper precautions to protect themselves from inhaling paint vapors. Respirators must be supplied by the contractor and must always be worn when spray painting.

## **12.11 Lockout/Tagout of Equipment**

12.11.1 When performing work on energized equipment (electrical, mechanical, etc.) the company lockout procedure must be used to ensure all equipment is secured in a zero energy state.

#### 12.12 **Toxic Gases or Oxygen Deficiency**

12.12.1 Toxic gases or oxygen deficiency cannot always be detected by sight or smell. Any suspect area or space shall be vented immediately and checked from top to bottom with the applicable gas detected equipment in the following order:

1. Oxygen (O<sub>2</sub>) content.
2. Combustible gas (lower explosive limit) content.
3. Toxic hazards (H<sub>2</sub>S, SO<sub>2</sub>, etc.).

12.12.2 Symptoms of inhalation of toxic gases or oxygen deficient atmosphere include: unconsciousness, dizziness, headache, still neck or weakness in the legs. If any of these symptoms are noticed, get into fresh air immediately and report the condition to your supervisor.

#### 12.13 **Piling Operations**

- Note the location of all overhead and underground obstructions before commencing work.
- Never hoist pilings if workers not directly involved are within range of a falling pile.
- Cover all drilled piling holes as they are completed and backfill or cover all completed piles.
- Completed piles must be marked with high visibility flagging by the piling contractor.
- Contractors mobilizing in marked piling areas are responsible to protect their workers from exposed rebar.
- Always be aware that you are often working in a congested area (i.e. drill rig, concrete truck, loader and cranes are always close).

### **13.0 FIRST AID/ACCIDENT PROCEDURE**

13.1 Any Accident at work must be reported immediately to the employee's supervisor.

- 13.2 Contractor shall provide trained First Aider with First Aid Box at location so that if any of Contractor's employees get injured, proper first aid can be administered at site.
- 13.3 After the Employee has been examined by the First Aider he shall recommend the best method of treatment, whether additional hospital treatment is required or if they are fit enough to continue working or should be sent home, etc.
- 13.4 If an ambulance is required, lift the nearest telephone and dial 999 to summon the emergency services.
- 13.5 If an ambulance has not been summoned, the injured or sick employees will be accompanied to hospital or their home by another employee.
- 13.6 An Accident Report must be completed on every occasion, by the employee's supervisor and submitted to the company representative.
- 13.7 A Record of all First Aid Treatment shall be maintained in the Accident Report Book.

#### **14.0 MARINE WORKS**

- 14.1 This guideline is primarily intended for land based construction, however the principles also apply to work over water and must be strictly adhered to in that case. Exemptions to this Guideline require the approval of the Project Manager.
- 14.2 If a DUSUP project involves work over water, the Project Manager will provide a Marine Safety Guideline to supplement this Guideline. The Over Water Guideline will contain such supplements as life saving equipment, emergency drills, fire fighting, buddy system, boat boarding and other requirements specific to the over water job.

#### **15.0 CONCLUDING NOTE**

In conclusion, DUSUP expects all workers to fully comply with these safety rules/practices. Should you have any questions regarding the meaning or interpretation of these rules/practices, consult the Project Manager responsible for your worksite.

**REMEMBER: You are responsible for safety!**