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ATTACHMENT -3.1

SAFETY PROCEDURE/HSE MANAGEMENT





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1.0 INTRODUCTION

1.1 The purpose of the present document is to outline the minimum safety requirements applicable to personnel, equipment and facilities during erection, pre-commissioning and commissioning activities of Construction Sites. Constructing safe structure and providing safe working environment to the personnel is a vital factor in successful construction business. Safety and health are as much as part of effective project planning and control as the cost, schedules, procurement and quality. Indeed they are all closely interrelated. Productivity, safety and quality can move forward in close proximity.



1.2 OBJECTIVES

Site Management has following main objectives regarding safety at site.

- a) No Accident
- b) To make the environment safe
- c) No harm to people
- d) Safety is everyone's responsibility
- e) To make the job safe

2.0 GENERAL

- 2.1 These rules do not exempt the Contractor from statutory Health, Safety and Environmental duties but are intended to assist in attaining a high standard of compliance with those duties, in order to provide a safe and healthy working environment.
- 2.2 OWNER will assist Contractors in any practical way to facilitate safe working, and requires full co-operation in observing these rules.
- 2.3 The rules for Health and Safety specified herein are in no way intended to relieve the Contractor from any obligation or liability under the Contract, nor is it intended to relieve the Contractor of any of his legal obligations for the avoidance of accidents.
- 2.4 In all matters arising in the performance of the Contract, the Contractor shall conform with all Statutory Regulations and By-Laws made with statutory authority by Government Departments or by Local or other Authorities that shall be applicable to the Works.
- 2.5 The Contractor, in the performance of the Contract, shall not endanger the safety or unlawfully interfere with the convenience of the public in any manner.
- 2.6 The Contractor's representative on Site shall communicate details of these rules for Health, Safety and Environment to all Contractors' employees and to all Subcontractors and Subcontractors' employees employed on the Site.

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2.7 The requirements of the Client/Owner's existing Site Rules/Regulations form part of the Contract and in the case of conflict between the Client's or OWNER' rules, the highest standard shall be applied.

2.8 At the tender stage OWNER will require to see a copy of the Contractor's policy, organization and arrangements for the Health and Safety at Work. The Contractor shall submitted complete documents Health and Safety Questionnaire.

3.0 **SITE HEALTH, SAFETY AND ENVIRONMENT INDUCTION**

3.1 All personnel shall receive a OWNER and Contractors' site Health, Safety and Environment induction before they commence work on site. The induction shall comprise information on the various hazards which they may come into contact with, instructions on the site emergency procedures, warning and alarm systems, and permit to work system, first aid locations, welfare facilities, access routes and project specific rules.

3.2 It is the responsibility of the Contractor to familiarize all new personnel to the Project on the actual location of muster points, fire alarm points, first aid stations and the like.

4.0 **DEMARCATON**

4.1 Construction personnel are restricted to the construction areas shown on the Contract Drawings. Any personnel found on/in or interfering with the existing works/plant, without permission, will be dismissed from site.

Before any work is started on the site, the Contractor's representative shall report to OWNER, who will confirm to the Contractor's representative, the limits of the working area(s) and shall be informed of any special requirements appertaining thereto.

5.0 **ACCESS TO THE CLIENT'S FACILITIES/BUILDINGS**

5.1 The Client's Facilities, including the canteen/cafeteria and toilets shall not be used by Construction Personnel.



5.2 Construction Personnel shall not enter any of the Client's building unless escorted by a member of the /OWNER's staff (or working with prior agreement to Client's Permit to Work System).

6.0 **BEHAVIOR ON SITE**

6.1 All Contractors' personnel shall treat everyone with respect and will refrain from any sexually suggestive or abusive comments or behavior.

7.0 **SMOKING, EATING AND DRINKING**

7.1 Smoking, eating and drinking is allowed in designated areas.

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8.0 DRUGS AND ALCOHOL



- 8.1 The possession or use of illicit drugs and alcohol on site is not permitted. Anyone who is found, or suspected to be, under the influence of either will be removed from site (subject to the Contractors' disciplinary procedure).
- 8.2 Anyone taking prescriptive drugs shall advise their employer, in particular those drugs that may impair their performance. Their employer may make arrangements to assign them to more suitable work, but shall ensure that the OWNER Construction manager is informed without delay.

9.0 PERMIT TO WORK SYSTEM

- 9.1 All construction works will be carried out under a permit to work system. It is designed to protect personnel and plant and consists of an organized and predefined safety procedure. It forms a clear record of all foreseeable hazards which have been considered in advance of construction operations.
- 9.2 The identities of the permit "Issuing Authority" will be OWNER and the "Permit Acceptor" will be the Contractor.
- 9.3 The following types of permits will be issued:
- Clearance Certificate - all other permits are invalid without this Certificate, (this certificate can be used for general work).
 - Hot Job Work Permit.
 - Electrical Work Permit.
 - Confined Spaces Work Permit.
 - Excavations Work Permit.
 - Working at Height work Permit.
 - Radiography Work Permit.
 - Cold Job Work Permit.
 - Road Closure Work Permit.
- 9.4 Contractors' supervisory personnel shall be inducted in the objectives, areas, types of permit and their use, also their responsibilities for ensuring personnel under their control understand and conform to the permits requirements. They shall be named and authorized by OWNER to request and accept permits to work.
- 9.5 Written requests for permits must be submitted to OWNER at least twenty-four hours in advance and the permits will be issued daily. Dependant on the site, the written request may be substituted by the Contractor completing OWNER' Clearance Certificate/Permit for authorization and entering into the system, this should be identified in the site specific Permit to Work System.

10.0 ACCESS, SITE PASSES AND SECURITY

10.1 Passes

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All personnel and vehicles shall enter and leave the site via the entrance authorized for construction personnel and traffic. Contractors' employees shall not enter any part of the site other than for the purpose of carrying out the Works.

All personnel shall be issued with a site pass. The site pass must be carried (or displayed on the pass holder's lapel) at all times. Details of all personnel requiring site passes shall be submitted to OWNER at least seven working days in advance of the planned start-on-site date. Site passes shall be submitted for inspection on entering or leaving the site, or when requested for inspection by OWNER or Security.

Loss of site passes must be reported immediately to OWNER. Lack of a site pass may mean delay at the site entrance. OWNER shall not accept any responsibility for lost time or costs incurred.

On completion of their assignment, or termination or their employment, all personnel will return their site pass to OWNER

10.2 Security

The security of Contractor's plant, tools, equipment, materials (including free issue materials properly handed-over by OWNER & Client) are the responsibility of the Contractor. It is the Contractor's responsibility to satisfy themselves that the security arrangements in existence on the site are adequate. The Contractor shall provide any other security measure that he deems necessary for the control and security of Contractor owned equipment and plant, including for free-issue plant and materials, both within the site establishment area and the working areas on the site.

OWNER accept no liability for any loss, damage or deterioration to the Contractor's plant tools equipment and materials.

OWNER reserves the right to search at random all personnel, any Contractor's employee, or employees of its servants, agents, Contractors or any vehicle entering or leaving the site. Any package or container being taken into or out of the site may be opened and inspected by security staff or any other persons authorized by OWNER to make such a search or inspection.



It is the Contractor's obligation and responsibility to ensure that OWNER' right to search and inspect persons and property, extends to and is brought to the attention of all his personnel.

Personnel shall give all possible assistance and make available any facilities required to assist OWNER and the Police in pursuance of the prosecution of any person(s) responsible for alleged malicious damage or loss to the Works or existing installations.



OWNER shall not accept any responsibility for the loss or damage of personal effects. The security and safekeeping of personal effects is the responsibility of each individual.

10.3 Construction personnel will not be admitted to the Construction Areas unless they have undergone OWNER' induction, and received a security pass.

No Induction, No Pass, No Access to the Site

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- 10.4 OWNER reserve the right to deny access to the Construction Site/Areas and/or the Construction Car parks to any person, or vehicle.
- 10.5 Individuals may be excluded from and refused future entry to the Site and/or Construction Areas for any breach of Safety or Security Rules, or exceeding the speed limit (20 mph on roads leading to the site off the public highway and 5 mph in the construction area).
- 10.6 No plant/skips, waste or materials may leave the Construction Area without the clearance of OWNER.
- 10.7 The taking of photographs on the site is prohibited without written permission from OWNER.
- 10.8 Vehicles with children under the age of 16 years or animals onboard will not be allowed access.
- 10.9 Visitors will only be allowed by appointment (two days' notice to OWNER is required). Visitors shall be accompanied by a member of the Contractor's team (who has received Health, Safety and Environment Induction) at all times. The visitor will have to obtain a visitor's pass, and be collected from and returned to the main gate. All visitors shall park in the Contractors' Temporary Car Park.
- 10.10 Each Contractor will keep a daily register of who is on site. The register will record name, pass number, time-in and time-out (records on time-clocks will not be permitted). This information shall be used to check personnel (role call) in the event of an emergency
- 10.11 All personnel and property accidents must be reported to OWNER and security, particularly incidents causing damage to vehicles of other parties.
- 11.0 PARKING, DELIVERIES AND VEHICLE PASSES**
- 11.1 Contractors' personnel shall not be allowed to park any vehicle on the main car park or site. All contractors shall park in the Contractors' Temporary Car Park.
- 11.2 The Contractor shall arrange transport between the parking area(s), the main site gate and the Contractor's establishment and working areas if judged to be necessary.
- 11.3 Vehicles used solely for transporting of tools and equipment may be allowed access to the working area(s) for unloading/loading only. All vehicles shall return to the authorized car park after unloading
- 11.4 Owners of vehicles parked illegally will have their car pass taken off them and told to remove the vehicle from site. They may have their site pass withdrawn and be refused further access to the Construction Site.
- 11.5 The Construction Areas will be restricted to construction plant and delivery vehicles.
- 11.6 The speed limit on site is 10 mph on the approach roads leading to the site off the public highway and 5 mph on the construction areas

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11.7 All vehicles parked on the Site and in the Temporary Construction Car Parks are at the owners' or drivers' risk. OWNER cannot be held responsible for any damage to, or any loss of a vehicle, or its contents.

11.8 All major deliveries are subject to three working days' notice, ie, notice to deliver on a Wednesday or Thursday morning must be issued to OWNER by 9.00am on the previous Monday. OWNER will then check with the Client to ensure the site can take delivery.

11.9 Note - delivery times may be restricted, check with OWNER.

11.10 Contractors should take note of any weight restrictions that may be in force in the locality and on the approach roads to the site.

12.0 **SITE OPENING AND CLOSING TIMES**

12.1 The site will be open from 8.00am to 6.00pm Monday to Saturday. Work outside the agreed normal working hours will be by agreement with OWNER (subject to two working days' notice). All applications for out of hour working will identify the scope of work, supervision arrangements and a list of personnel.

13.0 **SITE SUPERVISION**

13.1 The Contractor must ensure that an employee of suitable seniority and authority, with responsibility for Health and Safety, is always present on site during the course of the Works, to supervise and direct the Works and to receive and implement instructions from OWNER. Seven days before commencing works on site, the Contractor must notify OWNER of the name of that employee.



13.2 All supervisory staff shall be made aware of their responsibilities for safety.

14.0 **TRAINING, COMPETENCE OF EMPLOYEES AND NOTIFICATION OF HAZARDS**

14.1 Each Contractor must ensure that all his supervision and employees have had adequate safety training and are experienced to carry out their work safely, prior to starting on site. Training should be continuous throughout a project and should include regular toolbox discussions, (on site briefings at the start of each working day/shift).

To this end, the Contractor must also ensure that specific hazards likely to be experienced on the Site, whether notified to them or discovered by them, are notified to their workforce together with any precautions to be taken and local rules to be observed. Similarly, such hazards should be notified to their Subcontractors and, where discovered by them, to OWNER.

14.2 Where particularly severe or unusual hazards may arise on site, OWNER reserves the right at no additional cost to request Contractors' employees to attend special safety training and instruction sessions, whether carried out on site or externally. OWNER also requires Contractors' employees to undergo specified induction safety training. These aspects should be checked prior to submission of Tenders or execution of the works.

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15.0 METHOD STATEMENTS

15.1 Contractors shall submit Safety Method Statements for all work activities, for example:

- Piling Operations.
- Excavation works.
- Lifting operations, as specified.
- Steel erection.
- Hot work operations.
- Radiography/NDT.
- Entry into confined spaces.
- Pressure testing.
- Working at height.
- Shot fired tools.
- Installation of pre-cast concrete planks.
- Pre-cast concrete structure.
- The erection of safety nets and fall arrest equipment.

Safety method statements must also be submitted for activities which have been identified as being of significant risk during the risk assessment process and activities selected by OWNER.



15.2 All Safety method statements must be submitted to OWNER at least seven days before planned commencement of the works.

15.3 The Safety method statement shall detail:

- The job to be undertaken.
- The individual activities required to complete the job.
- The individual trades/disciplines involved in each activity.
- Plant, equipment and tools to be used in each activity.
- Any substances/chemicals to be used and where, and during which activity they will be used (together with a COSHH assessment).
- The Name(s) of the Supervisor(s) for each activity.
- The Name of the person in overall charge of the job.
- A detailed description of how the work will be done including control measures and procedures to complete each activity and the overall job safety.
- All hot work.

5.4 Compliance with the contents of the safety method statement shall be monitored on a daily basis and addressed during Contractors' safety management meetings.

15.5 The Contractor must ensure that employees executing the works are fully briefed and are made aware of the details within the approved Safety Method Statements, prior to starting the task, this includes highlighting hazards associated, associated risk assessments and reduction measures.

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16.0 RISK ASSESSMENTS

16.1 Contractors will be required to produce risk assessments for all works under their control. The risk assessment shall be submitted as part of the Safety Method Statement to OWNER at least seven days before the job commences, and include the following information:

- Identification of all hazards applicable to significant risk activities.
- Details of measures in place to control the risk.
- Justification that the existing control measures are adequate or if not, a detailed action plan on how the risk(s) shall be controlled.

16.2 The use of Generic Risk Assessments is only acceptable if they follow the logical progression of the method statement and that specific operation, otherwise, task specific risk assessments will be required.

16.3 All risk assessments must be communicated to the workforce who will be responsible for undertaking the work.



17.0 COMPLIANCE WITH STATUTORY REGULATIONS

17.1 Contractors shall carry out their work in accordance with statutory legislation. It is the duty of the Contractor to have knowledge of all relevant legislation and take account of it in the planning and execution of the work on OWNER' Sites.

18.0 INFORMATION TO BE PROVIDED AND POSTED

18.1 Contractors shall have in place, and issue to OWNER the following documents or information prior to commencement of their work, (where detailed within these rules):

- 18.1.1 Safety, Health and Environmental Policy.
- 18.1.2 Employer's Liability Insurance Certificate.
- 18.1.3 A detailed Health, Safety and Environment Plan, compliant with the project plan developed by the Planning Supervisor and/or Principal Contractor.
- 18.1.4 Work Method Statement Lifting Studies.
- 18.1.5 COSHH Procedures and Assessments.
- 18.1.6 Noise Procedures and Assessments.
- 18.1.7 Name of the individual appointed as the Site Safety Supervisor/Advisor.
- 18.1.8 Test certificates and examination for lifting gear, plant and appliances to be used on site. (Duplicates to be provided for OWNER's records.)
- 18.1.9 Drawings and calculations relating to false work, designed scaffolds, ground works and supporting temporary works.
- 18.1.10 Details of young persons to be employed on site.
- 18.1.11 Information relating to hazards associated with plant, operation and materials used in the works.
- 18.1.12 Proof of training for all personnel engaged in the works.
- 18.1.13 Daily Labour Returns.
- 18.1.14 Monthly Return of Accident Statistics to submitted OWNER format (Nil returns required).

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- 18.1.15 Personal Injury Report to be submitted to OWNER format (all injuries, however minor, to be reported). OWNER may request a detailed investigation into an accident. OWNER' decision on which incidents require detailed investigation is final.
- 18.1.16 Dangerous Occurrences, Incidents, Damage to Equipment and/or Property report to be submitted to OWNER format.
- 18.1.17 All entries/records of accidents entered into the Contractor's Accident Book shall also be copied into OWNER' Accident Book by the Contractor.
- 18.1.18 Copies of all Statutory Registers to be submitted weekly to OWNER.
- 18.1.19 Copies of the Contractor's Safety Officer/Advisor's reports of their findings on site visits/inspections.

18.2 Accidents, Incidents, Dangerous Occurrences and Notifiable Diseases

18.2.1 Accidents/Incidents/ Dangerous Occurrences/Near Misses

All accidents/incidents/dangerous occurrences/near misses must be notified to OWNER immediately, and a report prepared.

For reportable incidents, a copy the report to the Authority must be submitted to OWNER on completion but no later than two calendar days after the accident.

18.2.2 OWNER reserves the right to decide which accident, incidents or minor injuries shall be investigated, and to what extent/format/contents of any investigation.

Note: All such notification or reports to OWNER do not release the Contractor of his statutory duties to report such matters to the Authorities by the quickest possible means (viz, telephone, fax and e-mail) immediately following the incident/accident.



19.0 PERSONAL PROTECTIVE EQUIPMENT/CLOTHING

19.1 All personnel on a OWNER' site must wear as a minimum safety helmet, hi-vis vest, safety glasses and protective footwear. Additional personal protective equipment may be required dependent on the tasks being undertaken or as dictated by the risk assessment.

19.2 Contractors shall provide all necessary personal protective clothing and equipment for their employees and renew as necessary. Records of the issue of such equipment must be maintained for inspection by OWNER.

19.3 The Contractor shall:

- Provide personal protective equipment which is comfortable and fit for purpose.
- Maintain and clean personal protective equipment.
- Replace free of charge defective, broken or lost personal protective equipment.
- Provide storage for personal protective equipment when not being used.
- Ensure that personal protective equipment is properly used.
- Give training, information and instruction on its use to employees.
- Ensure that all personnel wear suitable clothing at all times (**no shorts, no sports shirts and no colours that may invite aggression - HSE "Keep Your Tops On" is enforced**).

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- OWNER reserves the right to direct the contractor to change/replace personal protective equipment if they determine that it is unsuitable or inadequate for its proposed use.

20.0 SUBSTANCES (Control of Substances Hazardous to Health – COSHH)



- 20.1 Substances hazardous to health must be identified prior to taking them onto site and, if they cannot be substituted or eliminated, assessments stating how the substances will be controlled and what precautions will be introduced must be carried out and recorded in writing by a competent person. This assessment must be communicated to, and understood by, the members of the workforce who are likely to come into contact with the substance(s). A copy of all assessments should be submitted to OWNER.
- 20.2 Hazardous substances may only be brought to site with OWNER' permission. They shall be kept to a minimum and must be stored in secure, appropriate containers with the contents clearly labelled. The containers must be stored in a secure area, preferably quarantined from the main stores areas, with suitable warning notices and signage posted.
- 20.3 Hazardous materials must not be allowed to discharge into natural watercourses or drainage systems.
- 20.4 All hazardous material waste must be kept separate from normal waste and be disposed of in a specialist disposal facility.

21.0 NOISE

- 21.1 When any operation of a Contractor is likely to expose any employee on site to an average noise level of 85 dB(A) and above, an assessment shall be carried out, by the Contractor, and records maintained for OWNER' inspection. In such circumstances, the Contractor must keep stocks of adequate ear defenders or other suitable hearing protection.
- 21.2 In addition to the foregoing, noise must be kept to a minimum at all times and must not exceed acceptable and/or locally specified rules and conditions relating to noise imposed by the Contract. Due regard must always be given to noise levels, and their effects on the local community and persons not involved in the operations. Permissible times for noisy work operations, and other restrictions, may be imposed by the Local Authority. Contractors receiving Notices or Prohibition Notices under the related legislation must notify OWNER of such Notices.

22.0 FIRST AID

- 22.1 All Contractors shall provide or ensure that they are provided with, such equipment and facilities as are adequate and appropriate in the circumstances for enabling first-aid to be rendered to any of their employees if they are injured or become ill at work.
- 22.2 No work shall commence on site until Contractors have trained first aid personnel on site.

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23.0 TOOL BOX TALKS

23.1 Tool Box Talks will be implemented by all Contractors. The agenda for these talks will be agreed with OWNER prior to the commencing of work.

24.0 HEALTH, SAFETY AND ENVIRONMENT INSPECTIONS/HEALTH, SAFETY AND ENVIRONMENT ADVISORS

24.1 The OWNER' Health, Safety and Environment Engineer/Advisor will visit the sites and carry out Site Safety Inspections. Contractors must co-operate in these inspections. Whenever Contractors' own Health, Safety and Environment Advisors visit site they must report their arrival and departure to the OWNER' Senior Representative, and provide a report of their findings and any necessary corrective action to be undertaken.

24.2 Contractors on the project must provide a full-time site based Health, Safety and Environment Advisor, when the intensity of the work requires or at the request of the OWNER.

24.3 Contractors who do not have full-time site based Health, Safety and Environment Advisors, shall ensure that their Health, Safety and Environment Advisor visits site once per week as a minimum.

24.4 Appointment of Health, Safety and Environment Supervision

The Contractor shall appoint safety supervision. The name of each appointee, together with evidence of his or her competence to carry out the requirements of the role, shall be submitted to OWNER for their approval.

25.0 HEALTH, SAFETY AND ENVIRONMENT MEETINGS

25.1 Health, Safety and Environment will form part of the agenda at all Site Progress Meetings. The Contractor's Safety Advisor may be asked to attend these progress meetings.



25.2 Once per month OWNER' Resident Construction Manager shall convene a Health Safety and Environment Meeting of all Contractors. Attendees at the meeting shall be all Contractors' Safety Advisors and Site Managers.

26.0 HEALTH, SAFETY AND ENVIRONMENT COMMITTEES AND SAFETY REPRESENTATIVES



26.1 OWNER encourage the workforce to nominate Safety Representatives as a way of improving communication on Health, Safety and Environment issues. Wherever Contractors' Safety Representatives have been appointed, OWNER must be informed of their appointment in writing.

27.0 HOUSEKEEPING

27.1 Contractors are expected to carry out their work in a clean, safe and orderly manner.

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- 27.2 Dust shall be kept to acceptable levels for the work being carried out. Waste materials and rubbish shall be cleared up as the work progresses and not left to introduce a safety hazard for other personnel engaged on the works.
- 27.3 Construction waste should never obstruct emergency exit routes, Firefighting equipment, emergency alarm call points or other emergency facilities.
- 27.4 From time to time as judged necessary, at the expiration of the contract, or when instructed to do so by OWNER, the Contractor shall undertake to clean and tidy his areas of occupation and work to the satisfaction of OWNER. Should the Contractor fail to do this, OWNER reserves the right to remove all offending materials and debris and to deduct the cost of this operation from the Contract Price. OWNER accepts no responsibility for any materials and/or tools which may be removed during this operation.
- 27.5 The Contractor must ensure that the following requirements are strictly enforced:
- Ample provision of refuse bins for all rubbish including organic waste such as food scraps, etc.
 - Daily clearance of all such bins to the area designated for this discharge.
 - No discharge of deleterious matter such as oils or other industrial waste.
- 27.6 All site offices, toilets, eating facilities, changing rooms, drying areas, stores, etc, which are the responsibility of the Contractor, shall be cleaned daily as a minimum by the Contractor. These facilities shall be checked for vermin on a two weekly rota.
- 28.0 FIRE PREVENTION**
- 28.1 Before welding, flame or arc cutting of metals, or other processes involving heat or naked lights are permitted, a fire risk assessment shall be carried out by the contractor and arrangements agreed with OWNER who will issue a Permit to Work.
- 28.2 Contractors shall familiarize both themselves and their employees with the fire safety arrangements, fire alarms, means of escape and emergency evacuation procedures.
- 28.3 Before leaving the premises and site, contractors shall ensure that naked lights and other ignition sources have been extinguished and electrical apparatus, where practicable, switched off and/or disconnected.
- 28.4 Contractors shall store Highly Flammable Liquids and Liquefied Petroleum Gases in a manner approved by OWNER.
- 28.5 OWNER' fire protection equipment shall only be used in an Emergency. Fire extinguishers/fire blankets for use when carrying out hot work shall be provided by the Contractor.

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29.0 REMOVAL OF WASTE FROM CONSTRUCTION SITES



- 29.1 The removal of waste shall only be undertaken by Licensed Waste Carriers.
- 29.2 Where there is any doubt of the composition of excavation spoil, it must be analyzed before it is removed from site.
- 29.3 Evidence of compliance shall be submitted to OWNER prior to the removal of any waste from site.
- 29.4 Controlled waste is any kind of household, industrial or commercial waste. This includes, for example:
- Scrap metal.
 - Building, construction, demolition and excavation waste, including waste from any repair or renovation.
 - Clinical waste.
 - Anything which is unwanted because it is surplus, broken, worn out, contaminated or spoiled in some other way.

Controlled waste disposal must be managed via a chain of transfer notes, maintained by the contractor and readily retrievable for OWNER' inspection.

Note: Soil Report and Soil Data are detailed in the Tender Enquiry Document

30.0 EXCAVATIONS AND OPENINGS

- 30.1 No excavation work shall be commenced by the Contractor unless a valid excavation permit has been issued. The Contractor shall have on site at all times while excavation work is being carried out, detection equipment which meets the latest technology.
- 30.2 Prior to the start of any excavation, OWNER shall be consulted and the presence of overhead and buried service records shall be checked. Where "live" services are present, hand excavation must be carried out until the location of the service has been identified, recorded and made safe.
- 30.3 The Contractor must erect suitable solid edge protection (i.e., double handrails) around excavations or openings. During the hours of darkness any excavations, openings or obstructions near or on roadways and walkways must be indicated by a sufficient number of warning lamps.
- 30.4 The sides of all excavations should be properly shored, battered or stepped to prevent collapse. No excavation work shall commence unless there are adequate resources present to ensure the stability of the excavation. Excavations shall be inspected prior to, or re-commencement of the work to ensure the excavation is still in a safe condition.
- 30.5 All excavations shall have a proper ladder access point provided.

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- 30.6 Spoil from excavations must be piled at least 1m from the edge of the hole.
- 30.7 Vehicular traffic shall be restricted from the edges of excavations, to prevent possible collapse.
- 31.0 **ELECTRICITY**
- 31.1 All Contractors must provide their own electrical power supplies.
- 31.2 Contractors must not interfere with, or work on any of, the Client's electrical installations or equipment without written consent.
- 31.3 Where Contractors have to work in the vicinity of electrical equipment they must carry out a risk assessment prior to commencement of any works.

ALL EQUIPMENT MUST BE TREATED AS "LIVE" UNLESS ISOLATED/LOCKED OFF AND TAGGED.

- 31.4 Repair or installation of any electrical equipment must only be carried out by a competent qualified electrician.
- 31.5 The electrical supply to powered hand tools must not exceed permissible volts, centre tapped giving appropriate volts to earth. Where this is not possible, due to the type of tool being used, the approval of OWNER must be sought in writing.

Electrical lighting for use in confined spaces must not exceed 24 volts (and be explosion proof where applicable). Powered hand tools used in confined spaces should, where possible, be air operated.



- 31.6 Contractors requiring to install temporary electrical supply equipment shall submit a temporary electrical supply procedure to OWNER for approval. The procedure shall, where necessary, cover installation of 380/440 volt system, installation of 110 volt system, lighting system, welding equipment installation, inspection testing operation and maintenance of temporary electrical systems.

31.6.1 Distribution Boards - Semi-permanent or Long Term

These should be accommodated in weatherproofed locations and be so arranged, if possible, that they will not need to be moved during the Contract. They should be proofed against interference or unauthorized operation and they should be large enough to accommodate all the necessary apparatus required. Each circuit should be clearly labeled and a circuit diagram should be located at each board.

31.6.2 Distribution Boards – Temporary

These are usually small portable panels or boards containing two or three socket outlets. They must be of robust construction, preferably all-insulated and should be supplied by heavy duty flexible cables, these cables shall not be spliced. Socket outlets, plug connectors and cable couplers should comply with High Standards or equivalent industry standard.

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31.6.3 Distribution Cables

These cables run from the main distribution boards to the local distribution boards throughout the site.

The cables will normally be multi-strand multi-core armored PVC cables but, in certain cases, may take the form of Mineral Insulated Copper Clad (MICC) cables. The latter type should be sheathed with PVC.

The installation must be so arranged as to prevent the need for long trailing cables. Socket outlets should be located as near the working point as possible.

Power and lighting circuits should be kept separate.

A full record should be made of all parts of the installation and should be kept up to date when alterations or extensions are made.

31.6.4 Underground Cables

Cables may be provided by the Contractor and laid underground or overhead to connect the supply or metering point to the semi-permanent site distribution boards.

The cables must be suitable for the duty and loading expected, e.g., armored PVC cables.

The cables should be buried at a safe depth or taken from a height so as not to obstruct the movement of persons and vehicles and their routes clearly marked both on the site and on the site plans.

The cables should be properly terminated and be provided with efficient circuit protection.

Cable routes should be so arranged that the minimum of obstruction is caused. The cables should be treated with care and given the same supervision and protection as other cables.



31.7 No temporary electrical supply shall be installed or modified without the agreement and approval of OWNER.

31.8 Any tool, plant or equipment exceeding 110 volts (55v to earth) shall be connected to an earth leakage circuit breaker (ELCB).

32.0 WORK IN CONFINED SPACES

32.1 All work in confined spaces must be covered by a safety method statement.

Safety method statements for work in confined spaces should include arrangements for the following as a minimum:

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- Issue of a permit to work
- Work scope and method.
- Nominated Supervisor.
- Tally man.
- Rescue procedures and equipment.
- Training.
- Tools and equipment to be used, including low voltage or pneumatic.
- Lighting requirements, including standby/emergency.
- Explosion proof fittings.
- Low voltage or pneumatic tools.
- Ventilation.
- Access.
- Bonding to prevent both electrical shock and static discharge.
- Work cycles, to reduce risk of heat exhaustion.
- Fire safety and extinguisher requirements.

32.2 Contractors shall not enter or commence work in any excavation, tank, vessel, pipe or chamber or other enclosed space, until a valid permit to work has been issued. Where Contractor's operations result in a dangerous atmosphere arising during the monitoring of the work activity, the permit to work issuing authority must be informed and all personnel removed from the area.

No new activity shall be introduced into a confined space without the permission and signed approval of the permit to work issuing authority.

Whilst work is ongoing within a confined space, the Contractor will be required to provide a trained standby/tally man.



32.4 All personnel who have to enter confined spaces must have undertaken the training appropriate to this task.

33.0 **MOBILE CRANES**

33.1 All cranes (including piling rigs, fork lift trucks, mobile elevated work platforms, hand lorries and similar equipment), whether owned by the Contractor or hired, must carry relevant test certificates and thorough examination reports, together with the manufacturer's handbook. Copies of this documentation must be submitted to OWNER prior to commencing work.

33.2 Only persons who are certificated as competent and authorized shall be allowed to operate cranes. The Contractor must be able to prove the competence of their employees to operate such equipment prior to its use.

33.3 Crane operators or other competent persons must carry out daily inspections and enter these in the crane register. Failure to maintain the register properly may lead to suspension of operations. This obligation is the responsibility of the crane hirer when he is supplying the crane and the operator. In addition, the Contractor will implement a regular inspection and maintenance programme to ensure that all components of the lifting device are in good condition.

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33.4 Travel routes for cranes and crane standing must be agreed with OWNER in order to avoid such things as overhead lines and other structures, underground services, excavations, made up ground, etc. Load spreader pads of sufficient size and thickness area, and of suitable material, e.g., metal plates, timber, etc, are to be placed under each outrigger foot, before all crane lifting operations are allowed to commence.

33.5 Crane duty charts (Load Radius Tables) must be displayed on or be available in the crane for easy reference. In addition, crane manufacturers' rigging/de-rigging instructions must be available on site. During rigging/de-rigging of jibs/booms, provision must be made to support sections/either side of rigging points, from below, utilizing tightly packed blocks.

33.6 All cranes shall be fitted with:

- A reverse warning audible alarm.
- Load radius indicator.
- Automatic safe load indication.
- Crane hooks with safety catches.

All of which must be serviceable.

33.7 All lifting equipment accompanying the crane shall comply with the requirements of lifting regulations.

33.8 The assembly, rigging and de-rigging of any crane components, including fly jibs, shall only be done under the supervision of a competent lifting supervisor. An approved risk assessment, together with the manufacturers' rigging/de-rigging instructions must be in place covering rigging activities for the equipment.

33.9 Every Contractor involved in lifting operations with a crane (including a piling rig) or mobile crane shall appoint, in writing, a lifting supervisor to oversee all lifting operations.

33.10 No crane shall travel with a suspended load.

33.11 Outriggers, when installed, must always be used.



34.0 **LIFTING OPERATIONS**

34.1 A Lifting Study and Safety Method Statement must be prepared for all heavy lifts exceeding 10 tons, or of a complex nature, e.g., tandem lifts or as specified by the Construction Manager (or the Rigging and Lifting Supervisor) and submitted to OWNER for review.

34.2 Every lifting operation must be properly planned by a nominated, competent person.

34.3 Every lifting operation shall be appropriately supervised.

34.4 All slinging and rigging of loads must be carried out by competent personnel.

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34.5 Clear communications between the crane operator and the person responsible for controlling the lift must be established.

All statutory Inspection Reports/Certification/Documentation and proof of the driver's training shall be photocopied and handed to OWNER prior to the setting up of the crane. Certification for lifting equipment to be used in the lift shall be identified and cross checked with the item of plant

35.0 STEEL ERECTION

35.1 The weight of each component in excess of 500 kg shall be clearly marked upon it.

35.2 Erectors must be fully informed of the correct erection sequence, by their supervisor, prior to each stage of work commencing.

35.3 Vertical access provision should, whenever possible, be fixed to the steel before it is lifted into position. Where this is not possible permanent access, ie, stairways or permanent metal ladders, shall be installed as early as possible.

35.4 Where horizontal access along structural members is required, as much work as possible must be completed before the steel is lifted into position. This includes:

Fixing of handrails or posts for securing steel wire ropes to be used in conjunction with safety harnesses or inertia reels.

The fixing of scaffold tubes (needles) to the lower flange of an I-beam to allow a working platform to be erected.

Where scaffold tubes (needles) are used they shall not support a working platform wider than three boards, or one lightweight staging without being "picked up".



Where no ladder access, permanent stairway, etc, leads onto working platforms, as described above, employees must use man riding baskets or mobile elevated work platforms as far as reasonably practicable to access working areas.

36.0 SCAFFOLDING



36.1 All scaffolding must be of good quality, be erected in compliance Good Practices for Access and Working Scaffolds, and special scaffold structures in steel. In addition to the main guard rail, an additional guardrail is required such that the gap between the toe-board and main guardrail does not exceed 470mm and all boards must be secured, without causing a tripping hazard.

36.2 All scaffolding shall be erected, modified and inspected by qualified competent scaffolders.

36.3 Where materials are to be positioned on scaffolding the Contractor's supervision must ensure that the scaffolding is not overloaded.

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- 36.4 Before use, scaffolding shall be inspected by an authorized Scaffold Inspector who shall complete a “scaffold tag” and secure it in a prominent position at the base of all ladder access points. The scaffolding tag will clearly show the following information as a minimum:
- Location.
 - Reference number.
 - Requested by.
 - Access Scaffold Classification.
 - Maximum distributed load/working lift.
 - Maximum number of working lifts to be used simultaneously.
 - Date erected.
 - Erected by.
 - Inspected by.
- 36.5 Scaffolds shall be inspected at weekly intervals or after storms by the authorised Scaffold Inspector who shall sign and date the “Scaffold Tag” after each inspection. Scaffolding not considered safe shall have the Scaffold Tag withdrawn and a prominent “DO NOT USE” sign displayed.
- 36.6 A scaffold register shall be maintained by the authorized Scaffold Inspector. This shall contain:
- Date of first and subsequent weekly inspections.
 - Individual identifications of all scaffolds which shall be cross-referenced to the Scaffold Tag identity number.
 - Clear name and signature of the authorized Scaffold Inspector against each separate scaffold inspected.
- 36.7 No scaffold may be erected which impedes normal access or can be accidentally struck by moving plant without prior consultation with OWNER to ensure that a safe system of work is in place.
- 36.8 Contractors are not permitted to erect or carry scaffolding near live overhead electrical cables, or equipment because of the danger of tubes making accidental contact with electrically charged apparatus.
- 36.9 If there is any doubt about the security of any anchorage, suspension points or ties for a scaffold, e.g., strength of existing buildings/structures, or those under construction, OWNER must be consulted before proceeding with erection.
- 36.10 All scaffolds must be provided with suitable access. Where ladders are used for this purpose they must be of adequate length and properly secured by lashing or fixing to prevent displacement.
- 36.11 Action shall be taken to warn personnel against using partly erected or dismantled scaffolds. A prominent “DO NOT USE” sign shall be clearly displayed.

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36.12 OWNER shall approve the sitting of the scaffold material racks/compounds.

36.13 Mobile tower scaffolds shall not be constructed with a height greater than 3 times the minimum base width and shall only be used on level ground. Towers shall only be erected by trained personnel.

36.14 In addition to weekly inspections, wooden scaffold boards shall be subject to a monthly inspection to ensure wood has not rotted or been subject to insect damage

36.15 The Contractor shall ensure that the system of work employed for the erection and dismantling of scaffolding shall not expose the Scaffolders to any risk.

36.16 All scaffolding must be erected and dismantled to the requirements laid down in the current regulations and guidance notes and to the requirements of OWNER.

37.0 **LADDERS/STEPS**

37.1 Ladders must be in good condition and free from defects, i.e., broken rungs, split stiles.

37.2 Ladders must not be painted.

37.3 Ladders must:

- Be securely fastened at the top.
- Be properly positioned at the base.
- Extend at least 1m (5 rungs) above the working platform.
- Be at an angle of 300mm out for every 1.2m vertical drop.

37.4 **All steps used on the project Site.**

37.5 Only one person must be allowed on a set of steps at any one time.

37.6 Persons must work with a set of steps of the appropriate height for the task.



37.7 The top rung of the steps must be kept at waist height, no work to be carried out above this height on steps.

37.8 Ladders are to be used as a means of access not as a working platform except for light, minor or one off activities. Then the person must wear a harness and tie-off to a suitable anchorage whilst carrying out the minor task.



38.0 **FALL PROTECTION**

38.1 Depending on the task and the risks, harnesses and appropriate anchorages/running lines will be used for activities carried out above a height of 2 meters.



38.2 Fall protection equipment shall be subject to regular inspection by a competent person, and a register maintained for OWNER' inspection.

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- 38.3 During the execution of work at height, where it is not practicable to work from within a standard working platform with double handrail and toe boards (for example erection of structural steelwork, installation of roof components, etc), safety netting capable of catching a falling person must be installed as far as reasonably practicable.
- 38.4 The provision of safety netting does not relieve individuals from utilizing fall protection devices during the execution of the works.
- 38.5 The safety nets should be manufactured to Indian Standard and erected in accordance with good practices by a competent person.
- 38.6 The safety nets must bear a label stating the normal size of the net; the date of manufacture, the deflection at the centre of the net during the prescribed test and the maximum distance below the working height for which the net is designed to be used.
- 38.7 Test certificates must be provided for all safety nets, which will state the breaking strength of the net and provide details of the drop test carried out.
- 38.8 All safety nets must be periodically tested at intervals not exceeding three months – and records of these tests must be retained.
- 38.9 A formal inspection of safety nets must be carried out weekly to check for damage, loose ties, changes in anchorage points, etc. Records of these inspections must also be retained.
- 39.0 MOBILE ELEVATED WORK PLATFORMS**
- 39.1 The term Mobile Elevated Work Platform (MEWP) covers the following types of equipment:
- Scissor lifts.
 - Telescopic booms or jibs.
 - Articulating and telescopic booms.
- 39.2 Anyone who is to operate a MEWP must be competent and have received formal training accredited by manufacturer.
- 39.3 Prior to any MEWP being used on site, a formal risk assessment must be carried out to identify any potential hazards which may exist as a consequence.
- 39.4 Whilst working within the platform of a MEWP, all personnel must wear a safety harness which is attached to a secure anchorage point within the platform.
- 39.5 Before commencing work from a MEWP, the surrounding area should be cordoned-off to prevent personnel straying into a potentially hazardous area.
- 39.6 The Safe Working Load specified on the MEWP must not be exceeded.
- 39.7 If the MEWP has been manufactured with outriggers or stabilizers, they must always be deployed.

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- 39.8 Prior to commencing work, ground conditions must be checked to ensure that the ground bearing capacity will not be exceeded by the loading from the MEWP. Where required, spreader plates shall be used to distribute the loading.
- 39.9 The MEWP shall only be permitted to travel with the platform occupied and/or the boom extended if it is within the machine's specified operational capabilities.
- 39.10 MEWP shall not be used as a jack, prop or support.
- 39.11 MEWP shall not be used as a crane or lifting device.
- 39.12 MEWP shall not be used primarily for the transport of goods or materials.
- 39.13 MEWP shall not be used in wind speed exceeding 30 mph (12.5 m/s).
- 39.14 All MEWPs must be subjected to a regular maintenance and inspection regime, which as a minimum will require weekly inspections by a competent person and a thorough examination every six months.
- 40.0 CONTRACTORS' TOOLS AND EQUIPMENT**
- 40.1 All Contractors' tools and equipment must be fit for purpose. Tools should be CE marked.
- 40.2 Guards and electrical trip switches must work effectively and must not be removed or by-passed.
- 40.3 All tools shall be of good quality and maintained in a safe working condition. Home made tools are not permitted.
- 40.4 The Contractor shall provide suitable storage with suitable racks and bins for storing tools and equipment.
- 40.5 All temporary construction leads, lighting and portable electric tools shall be of appropriate volts.
- 40.6 The Contractor shall nominate or employ the services of a competent qualified person to inspect and tag electrical power hand tools, transformers, distribution boards, extension cables, etc, on an at least a three monthly basis (PAT testing). The tag shall display name, signature of the individual inspecting the tool and date of inspection.
- 40.7 The Contractor shall keep, on site, a register of all electrical power hand tools in use. The register shall detail:
- Individual identity number of the tool.
 - Name, signature and company of the qualified electrician carrying out the inspection.
 - Date of inspection.
 - Maintenance and Inspection schedule.
 - Remarks on condition of tool and whether repaired or withdrawn from use.

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40.8 No electrical powered hand tool shall be used unless it is tagged with a current "INSPECTION" tag.

40.9 All electrical leads must be connected to the power source through standard industrial waterproofed plugs and sockets, which shall be in good condition.

41.0 **MECHANICAL PLANT AND EQUIPMENT**

41.1 Mechanical plant and equipment is defined as:

- Earthmoving plant.
- Road making plant and equipment.
- Concrete batching plant and mixers.
- Forklift trucks.
- Miscellaneous plant, including generators and compressors.
- Mobile elevating work platforms (e.g., star- lift, cherry picker, etc).

41.2 All items of mechanical plant transported to the project shall be in a safe and sound condition and shall be properly maintained. Emissions shall be to acceptable limits and no smoke shall be discharged.

41.3 A programme of regular, preventative maintenance shall be established by the Contractor, as per the manufacturer's handbook, to ensure that all plant equipment is systematically inspected, maintained and repaired as necessary.

41.4 The preventative maintenance programme and the Contractor's employee responsible for taking the action shall be clearly detailed, identified and given to OWNER.

41.5 A safe system of work must exist during all maintenance and repair operations to ensure that no part of the machinery is set in motion while work is being carried out.

41.6 Plant maintenance must not be carried out within the main construction site.



41.7 Where refueling is required, facilities provided shall be adequately covered by fire extinguishers, earthing, warning signs, bonding and proper fuel dispensers. Refueling areas shall be curbed to avoid spills.

41.8 Waste oil removed from vehicles after servicing shall be sent to the appropriate off-site waste disposal facility and this is the responsibility of the Contractor.

41.9 The Client's' tools, plant and equipment may not be used by Contractors without their express permission.

42.0 **COMPETENCY/PLANT EQUIPMENT**

42.1 All drivers and operators of mobile plant (mechanically propelled vehicles) shall be in possession of the appropriate license for the class of vehicle.

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42.2 It is the responsibility of the contractor to ensure that all drivers, operators and banks men of mobile plant (mechanically propelled vehicles) are certificated as competent.

42.3 **General**

42.3.1 Every dangerous part of machinery shall be securely guarded.

42.3.2 Any guards removed for maintenance or repair purposes must be replaced before the machine is set in motion.

42.3.3 No mobile plant (mechanically propelled vehicles) shall carry passengers unless a proper fixed seat is provided, except when the equipment is specifically designed for standing personnel.

42.3.4 Mobile plant (mechanically propelled vehicles) must be parked on firm level ground when unattended, the engine stopped, brakes on and any load or attachment lowered to the ground and the keys left in the ignition.

42.3.5 No mechanical plant or equipment shall be sited on or operated on any area of the project without express the permission of OWNER.

42.3.6 All items of mobile plant (mechanically propelled vehicles) shall be fitted with a reverse warning audible alarm.

42.3.7 All drivers/operators of mobile plant (mechanically propelled vehicles) shall strictly obey the instructions of the site security, traffic regulations and speed limits. A banks man shall be in attendance during all reversing procedures.

42.4 **Inspection**

All mobile equipment (mechanically propelled vehicles) shall be inspected by a competent person appointed by the Contractor prior to use on site. Equipment considered to be unsafe, by OWNER, shall not be allowed access to the site.



42.5 **Flame Arrestors**

42.6 All mobile plant for use in Petro Chemical Live Plant Areas, or during the Start-up and Commissioning Phase of the project, must be fitted with Exhaust Flame Arrestors and Chalwyn Valves where there is a risk of flammable gas releases.

43.0 **MACHINERY GUARDING**

43.1 Unauthorized personnel must not operate, interfere or tamper with plant or equipment.

43.2 Persons authorized to use machines must first check that guards are in position and that any other safety devices, e.g., emergency stops, are in working order.

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43.3 All plant or equipment brought onto the site must be properly guarded to prevent injury and be CE marked.

NO GUARD OR FENCE MAY BE REMOVED FROM MACHINERY.

44.0 **WELDING**

44.1 Welding sets shall be in good condition, properly maintained and earthed.

44.2 Isolation switches on welding sets shall be readily accessible.

44.3 Terminals and live components shall be adequately protected.

44.4 Cables shall be frequently inspected to ensure the insulation is intact.

44.5 Damaged cables or electrical holders shall be properly repaired or replaced.

44.6 The welding return cable shall be secured onto the work piece. If this is not practical it shall be as near as possible.

44.7 Proper cable connectors shall be used when connecting runs of cables.

44.8 Welders shall wear:

- Face and eye protection with correct grade of filter.
- Welder's gauntlets.
- Long sleeved flame retardant overalls.

Welders shall wear safety helmets at all times, except whilst welding, when it is agreed as impractical and written permission is granted by OWNER, subject to mitigation of hazard, i.e., no work overhead, or shielded from falling objects.

44.9 Welding areas should whenever possible be screened off using flame retardant blanket or other suitable material. All combustible materials must be cleared from the vicinity of all welding operations.

44.10 Asbestos material shall not be used on the project.



44.11 Electric Arc Welding equipment and accessories shall conform to European Standards.

44.12 Fire extinguishers must be provided and kept adjacent to any welding or cutting activity.

45.0 **ABRASIVE WHEELS**

45.1 Contractors must ensure that any of their employees authorized to change Abrasive Wheels have attended an approved course of training and have been appointed in writing.

45.2 Details of each employee trained must be entered in the training register kept on site. Contractors must produce certificates and registers on request.

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- 45.3 Machines used to drive Abrasive Wheels must be in good condition and properly guarded.
- 45.4 Pedestal or bench mounted grinders must have an emergency stop button and be fitted with a properly adjusted tool rest and guard.
- 45.5 All hand held grinders shall have a “Dead Man” switch and appropriate guards fitted.
- 45.6 The use of hand held angle grinders over 115mm shall only be permitted for specific tasks, subject to Owners’ approval.



46.0 USE OF GAS AND OXYGEN EQUIPMENT

- 46.1 Compressed gas cylinders shall:
- Be in good condition and not suffering from corrosion.
 - Be properly colour coded (reference should be made to National Standards).
 - Be individually identified.

Hoses shall be properly colour coded to the internationally recognized standard for the gas being used, in good condition and fitted with hose connectors attached by permanent clips.

Check valves and flashback arrestors must be used on both hoses at all times.

- 46.2 Users shall check the equipment for perished, damaged hoses, regulators, and pressure gauges, etc. Defects must be reported to their supervisors and faulty equipment must be replaced.
- 46.3 When on site, cylinders must be in trolleys or secured in an upright position at all times. A bottle key shall be kept with cylinders in use.
- 46.4 Stored oxygen and fuel gas cylinders shall be kept separate with minimum separation distance of 5m. Cylinders must never be stored or used in a horizontal position cylinders must be secured in an upright position. Empty cylinders must also be separated from full cylinders. Cylinders shall be stored in lockable open mesh bottle cages.
- 46.5 All gas cylinders must be handled with care and they must not be misused or abused. They must be properly shut off when not in use and safety caps must be fitted when being moved.
- 46.6 Great care must be taken to ensure that gas equipment, including hoses, are not allowed to cause obstruction of roadways, walkways, manholes, ladders or other means of access where they can cause hazards or be damaged. Hoses not in use should be coiled up and put in a safe place. Hoses should whenever possible be supported off the ground.
- 46.7 Where any operation involves the use of gas and oxygen equipment in enclosed or semi-enclosed spaces, Contractors’ supervision must carry out frequent checks to ensure these procedures are complied with.

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46.8 During meal breaks and at stopping times, hoses and equipment must be removed from confined spaces or excavations. Oxygen or gas cylinders must not be taken into confined spaces for use or storage.

46.9 No modification to tanks or drums which have contained flammable liquid shall be undertaken at the site.

47.0 ABRASIVE AIR BLAST CLEANIN

47.1 Blast cleaning shall be carried out in an enclosed designated area.

Provision shall be made to prevent the spread of grit and dust out of the blast area and to collect and dispose of the spoil to an approved location.

47.2 The blast cleaning area shall be indicated by prominent warning signs.

47.3 Only approved abrasives having no free silica shall be used.

47.4 Personnel involved in the actual blasting of material shall be protected by a positive pressure, blast hood, meeting approved standards and providing both respiratory and eye protection, with breathing air supplied via a suitable filter.

47.5 The nozzle shall be fitted with a properly functioning dead man's handle, and anti-static abrasive blast hoses. It is required that all equipment be grounded and checked for ground potential

47.6 A standby man shall stay by the blast pot.

48.0 COMPRESSED AIR

48.1 All air receivers and compressors shall be in good condition and properly maintained.

48.2 Air receivers shall be individually identified and marked with their safe working pressure.



48.3 Air receivers shall be accompanied by a valid test certificate which shall be kept on site by the Contractor and shown to OWNER before bringing the vessel onto site.

48.4 All air receivers must be fitted with a properly set pressure relief valve.

48.5 Air receivers shall be examined and the pressure relief valve tested by an independent examiner at yearly intervals.

48.6 There shall be a register of all air receivers containing:

- Individual identification numbers.
- Dates of independent inspections.
- Name and signature of independent examiner.
- Rates safe working pressure.
- Pressure at which pressure relief valve lifted shall be kept on site by the Contractor along with all current certification.

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- 48.7 The requirements inclusive also apply to compressor mounted air receivers.
- 48.8 All compressed air fittings shall be wired and/or restrained to prevent them from whipping should the coupling separate.
- 48.9 Only hose clamps designed for compressed air service shall be used. Worm drive (Jubilee) clips are not acceptable.

COMPRESSED AIR MUST NEVER BE USED FOR CLEANING CLOTHES.

- 48.10 Nozzles used for air blowing must be fitted with a “Dead Man” valve.
- 49.0 **MOBILE PHONES AND PAGERS**
- 49.1 Radios, personal CD and tape players are not allowed in the construction areas.
- 49.2 Mobile phones and pagers are prohibited in the designated construction areas by any hands-on personnel. External to the designated construction areas, providing it does not detract the user from any safety requirements and the user is stationary, then mobile phones and pagers may be used. Other uses of this equipment will be at the discretion of OWNER.

50.0 RADIOGRAPHY/NDT

- 50.1 Contractors who carry out radiography/NDT on the site must comply with safe systems of work. In particular, they MUST ensure that:
- Radiography areas are clearly marked using barrier tapes, notices and flashing lights.
 - Audible warning (horns) must be sounded before a source is exposed.
 - Only Classified Workers are engaged in radiography work.
 - All other personnel are clear of the area before radiography takes place.
 - Radiography work is supervised by a Qualified Radiological Protection Supervisor. Such supervisors must be nominated in writing and notified to OWNER.
 - Any incident which may have resulted in over-exposure of any personnel is brought to the attention of OWNER for investigation.
 - They have a written emergency procedure to be followed in the event of loss of an isotope or damage or malfunction of associated equipment. This procedure must be submitted to OWNER for approval before commencement.
 - A certified meter is available on site.
 - Radiography is carried out at the times agreed with OWNER normally this will only be during silent hours. OWNER requires twenty-four hours notice of such planned work.
- 50.2 Contractors who are not involved in radiography work must ensure that their employees observe warning notices, alarms and barriers in use where such work is being carried out.
- 50.3 Contractors must ensure that statutory notification is made to the authorities of radiography works.
- 50.4 Disposal of spent radioactive sources shall be agreed with OWNER.

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51.0 **WORKING OVER WATER/DIVING OPERATIONS**

51.1 The Contractor shall provide a buoyancy aid to any employee working over (or near) water where there is a likelihood of falling in.

The Contractor shall also supply a sufficient number of life buoys to be permanently located at the point(s) of danger. The life buoys shall be attached to a throwing line.

Where rescue of a person falling into the water may be difficult, OWNER may require the Contractor to supply a standby boat, crewed by a competent boatman trained in rescue and resuscitation techniques.

51.2 Diving operations may only be carried out using approved specialist diving contractors, employing certified commercial divers, and upon acceptance by OWNER of their Health, Safety and Environment plan and method statements (Diving Rules).

52.0 **ASBESTOS**

52.1 Only certified Contractors are allowed to handle asbestos.

53.0 **IMPROVEMENT AND PROHIBITION NOTICES**

53.1 In the event of an Improvement or Prohibition Notice being served by an Inspector, the OWNER Senior Representative must be notified immediately and the Contractor shall comply with the terms of such Notice immediately.

54.0 **CARTRIDGE OPERATED FIXING TOOLS**

The use of Cartridge Operated tools shall only be permitted with the express permission of OWNER, subject to an approved method statement and risk assessment, and use only by competent, trained operators).

55.0 **SITE ESTABLISHMENT AND AMENITIES**

55.1 Details of temporary services to be provided by Contractor.



56.0 **ACCOMMODATION**

56.1 An area will be allocated for temporary site establishment facilities/services.

56.2 When required by the Contract, the Contractor shall provide and maintain (including de-watering when necessary) a suitable level and hardcore surface in the area allocated for temporary buildings such as offices, stores, workshops, mess huts and a stores compound.

56.3 When required by the Contract, the Contractor shall provide all site offices, stores facilities, workshops and mess huts for the accommodation of staff/site personnel. Proposals for the Contractor's temporary buildings shall be submitted to OWNER for approval with their tender.

56.4 **Storage in Permanent Buildings**

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No Plant, Contractor's Equipment or Construction Aids shall be stored in any permanent building without first obtaining the written permission of OWNER. Such permission will not relieve the Contractor of the obligation to protect the building from damage whilst used as a store. If permission to use the building is refused by OWNER, the Contractor shall provide alternative storage facilities at no additional cost to OWNER.

56.5 Sanitary Facilities

All toilets and washing facilities shall be provided by the Contractor. The supply and installation of necessary water sewage/drainage pipe work, pits, etc, for the facilities and the regular emptying and servicing are the responsibility of the Contractor.

56.6 Canteen

The Contractor must provide mess-huts for his employees and arrange any canteen facilities required for his employees and those of any others employed by him in connection with the Work.

57.0 TEMPORARY SERVICES

57.1 Telephone, Facsimile, etc

Arrangements for the provision of telephones, computer modems and/or facsimile facilities shall be made directly with providers of such facilities by the Contractor.

57.2 Electricity



If under the contract the Contractor is responsible for providing electricity for the site establishment amenities and working area(s), the Contractor shall ascertain the type, location and available spare capacity of the electrical point(s) of supply and provide cable, connections, isolating switches and earth leakage protection of approved specification.

If the Contractor's requirements for temporary electrical supplies exceed those agreed and render the available service inadequate, the Contractor shall provide the additional requirements at no extra cost to OWNER.

Electrical installations including all cables, temporary connections, wandering leads and all electrical facilities and/or equipment required for the execution of the Works shall be properly installed and maintained by the Contractor.

Temporary electrical installations must comply with all appropriate statutory requirements, the latest edition of the Institution of Electrical Engineers Regulations, COP for Distribution of Electricity on Construction and Building Sites and Electrical Safety on Construction Sites.

Electrical equipment and installation shall at all times be subject to inspection and approval by OWNER but this shall not relieve the Installer/User of their responsibilities for the safety of the system.

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Electrical equipment or cables forming part of the permanent installation shall not be used by the Contractor for temporary services.

Temporary buildings shall have an external isolating switch.

The Contractor shall supply, install and maintain any temporary workface lighting.

57.3 **Water**

A free supply of potable water for drinking and raw water for washing/toilet facilities, mixing concrete, hydrostatic testing and other construction purposes shall be made available adjacent to the site battery limits. The Contractor shall ascertain the location of the supply point and shall provide and install any temporary pipe work necessary for the provision, use and disposal of such water.

58.0 **DISCHARGES INTO THE INTERNAL AND EXTERNAL DRAINAGE SYSTEMS, LAND AND CONSTRUCTION AREAS**

58.1 All proposed controlled discharges into the site drainage systems shall be agreed with OWNER.

58.2 Any water discharged on existing roads, hard shoulders or drainage systems shall first pass through a filtering interceptor (which must be regularly cleaned) to prevent the discharge of sludge or solids.

58.3 Any damage to the Works caused by prolonged or excessive pumping and any damage or nuisance arising out of pumping operations shall be the liability of the Contractor.

58.4 Subsequent to filling with water and testing of any part of the Works for hydraulic testing, the Contractor shall be responsible for safe disposal of the water, and shall ensure that the rate of discharge is controlled and kept within the capabilities of any drainage system utilized.

58.5 The Contractor shall provide all requisite equipment and materials to ensure that all drains, rivers, streams or waterways are safeguarded against pollution.



59.0 **MAINTENANCE OF ROADS AND DRAINS**

59.1 Existing roads, road gullies and drains shall be inspected by OWNER and the Contractor prior to work commencing. A record of this inspection shall be compiled and on the completion of the Works, a further inspection will be carried out and any necessary repairs to road surfaces or cleaning of drains shall be to the Contractor's cost.

59.2 The Contractor shall provide temporary protection to any existing roads to prevent all possibility of damage whatsoever arising from the Works.

59.3 The Contractor shall at all times in the execution of the work maintain all public and site roads in a clean condition to the satisfaction of OWNER.

59.4 The Contractor shall immediately remove all mud, earth and debris from road surfaces.

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59.5 Track-laying cranes and similar vehicles must not travel on finished roads without written authority from OWNER and then only with the use of timber mats or approved precautions to prevent damage to the roads. Timber mats or other approved precautions shall be supplied by the Contractor.

60.0 MATERIALS – STORAGE AND CONTROL

60.1 The Contractor must give a minimum of twenty-four hours notice of the intention to uplift and transport materials/equipment supplied free-issue from OWNER storage facilities to the point of erection or Contractor's storage facility.

60.2 Free-issue materials/equipment furnished by OWNER shall be accepted by the Contractor and become the responsibility of the Contractor until acceptance of the Works. Any damage caused to free-issue materials after acceptance shall be repaired or replaced by the Contractor to OWNER' satisfaction.

60.3 Storage of Petrol, Fuels, Lubricants etc

All fuel and construction materials which may contaminate the site drains, land or watercourses shall be stored in bounded areas. Refueling of plant shall be via bounded bowers. All construction plant in static locations shall have drip trays which shall be cleared daily.

60.4 Environmental Impacts

The Contractor shall, prior to commencement of the work, present to OWNER/CLIENT for their approval a register of environmental impacts that necessarily arise from their works.

Each identified environmental impact shall be accompanied by an individual Risk Assessment, clearly showing the reduction measures put in place to ensure mitigation of residual risk.

61.0 Penalty

The Contractor shall adhere consistently to all provisions of HSE requirements. In case of non compliances and also for repeated failure in implementation of any of the HSE provisions, Owner may impose stoppage of work without any cost & time implication to the Owner and/or impose a suitable penalty.

The amount of penalty to be levied against defaulted Contractor shall be up to a cumulative limit of 0 .5 % (Zero decimal five percent) of the contract value.

This penalty shall be in addition to all other penalties specified elsewhere in the contract. The decision of imposing stop-work-instruction and imposition of penalty shall rest with Owner. The same shall be binding on the Contractor. Imposition of penalty does not make the Contractor eligible to continue the work in unsafe manner.

The amount of penalty applicable for the Contractor on different types of HSE violations is As per Owners site guidelines.