May 2016

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شركة عُمان لتطوير المنطقة الاقتصادية الخاصة بالدقم ش.م.ع
Oman Company for the Development of Special Economic Zone at Al-Duqm SAOC

HSE

POLICY

DOCUMENT AUTHORISATION:		
Document prepare	**Document checked By**	**Document Approved By**
Hamood Al Shabibi	**Stephen ck Kwok**	**Salim Al Sulaimani**
Sr. HSE specialist	**Manager of contracts and Tendering**	**CEO of OCDSEZAD**
Sig:		

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1. Welcome to Duqm

The Special Economic Zone in Duqm (SEZAD) has been established as per the provision of the Royal Decree No 119/2011 issued on 26TH October 2011. The establishment of SEZAD crowns the great efforts made by the Sultanate to diversify sources of national economy. SEZAD stretches over 2000 square kilometres with 60km long beach front.

SEZAD is the biggest special economic zone in the Middle East region. This large size allows the establishment of various mega projects. The government has taken into consideration to ensure that the area is fit for a wide number of business activities to meet the needs of investors. The area is divided into 8 main areas that include the port, the ship dry dock, the oil refinery, the regional airport, the heavy - medium and light industries complex, the residential, commercial and tourism area, in addition to logistic services area. Necessary measures have been taken while preparing the designs to ensure ecological balance and allow residents to move from one area to another smoothly using the main and sub road networks.

SEZAD has many competitive advantages to its credit which qualify it to become a logistic and marine hub not only for Oman but for the Gulf region on the Arab Sea outside Hormuz Straight. The area will house an advanced petrochemical industries complex that will use secured oil and natural gas supplies. It will also house an integrated, manufacturing industry area that utilises the available natural resources in al Wusta governorate. Moreover, the area is known for its abundant fish resources, which qualify it to become a hub for fish processing industries and aquaculture projects. Duqm can be also an ideal destination for those seeking tranquillity and peace of mind as it enjoys modest climate during summer as well as winter, in addition to the natural beauty of the region.

These competitive edges are complimented by a number of facilities and incentives provided by SEZAD Authority including 100% freehold by foreigners, tax exemption for up to 30 years renewable for similar period and easy recruitment of expatriate manpower for projects in the area, issuance of entry visas and residency permits for expatriate manpower and their families, in addition to the facilitation of customs procedures. Many services are also provided to investors in the area such as registration of business and industrial activities, issuing licences for tourism projects and issuing environmental permits.

4. The Oman Company for the Development of Special Economic Zone at Al-Duqm.

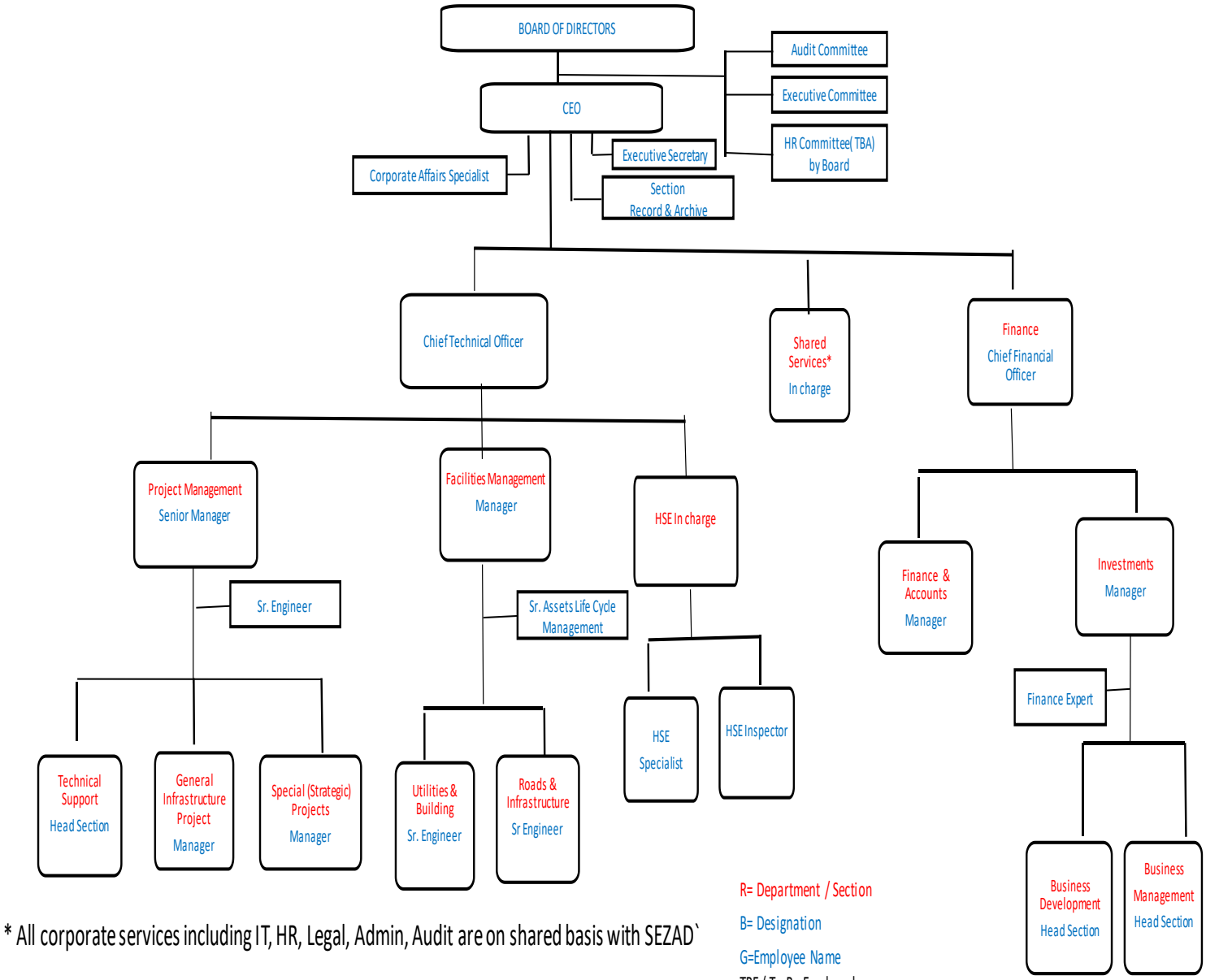
The Duqm Special Economic Zone Authority (SEZAD) manages, regulates, and develops all economic activities in Duqm. It plans, designs, and implements long-term strategies for infrastructural development and attracts investments to promote a wide spectrum of economic activities. It also oversees the urban expansion of the modern Duqm city while protecting the environment, thereby ensuring Duqm has its rightful place as the best location to visit, live, work and invest in the Middle East.

The Oman Company for the Development of Special Economic Zone at Al-Duqm (OCDSEZD) is a wholly owned subsidiary of SEZAD and has commercial responsibilities for development of the project. The Chief Executive Officer of OCDSEZD has recognised that a fundamental element of achieving success in the implementation of strategic development is the formulation of a comprehensive, robust and relevant Health and Safety Policy.

This policy provides a framework to ensure that the activities undertaken by OCDSEZD do not detrimentally affect the health, safety and welfare of its employees or the public. Additionally and very importantly, the Policy will serve as a health and safety management 'benchmark' standard for other organisations and contractors throughout the development process.

The following diagram illustrates the organisational structure of OCDSEZD and the 'Health and Safety Responsibilities' section details specific expectations of managers (amongst others) with regard to the management of safety within OCDSEZD.

5. OCDSEZD Organisational Chart



* All corporate services including IT, HR, Legal, Admin, Audit are on shared basis with SEZAD`

R= Department / Section

B= Designation

G=Employee Name

TBE (To Be Employed

TBA(To Be Approve)

6. Chief Executive Officer Statement

OCDSEZD recognises the importance of a healthy workforce in achieving business success and is committed to providing and maintaining a safe and healthy workplace for all staff. We will take all necessary steps to ensure, so far as is reasonably practicable, that our activities do not have a detrimental impact on the well-being of staff or others who may be affected by these activities. OCDSEZD will promote a positive safety culture throughout the organisation with safety forming an integral part of management and employee responsibilities.

To achieve this, OCDSEZD will:

- **Provide adequate control of the health and safety risks arising from our work activities;**
- **Provide and maintain safe plant and equipment;**
- **Provide information, instruction and supervision for employees, investors and visitors;**
- **Ensure that all employees are competent to do their job and give them adequate training;**
- **Prevent accidents and cases of work related ill-health;**
- **Listen to our employee's complaints on matters affecting their health and safety;**
- **Formulate and implement effective emergency procedures;**
- **Ensure safe handling and use of substances;**
- **Require employees to co-operate with steps taken to protect their health, safety and welfare;**
- **Maintain safe and healthy working conditions;**
- **Review and revise this policy at regular intervals.**

7. Responsibilities

OCDSEZD as the employer has overall responsibility for health and safety. However, to ensure the effective and efficient management of health and safety, responsibilities commensurate with seniority are allocated to managers at differing organisational strata. Health and safety is not a 'bolt-on' function and managers should integrate their responsibilities for health and safety into their normal business management function.

Generally, safety management responsibilities fall into broad hierarchical bandings:

Chief Executive Officer (CEO):

Gives strategic direction, sets the organisational policy standard and is the 'controlling mind' with regard to health and safety.

Senior Management Team:

Develop strategic safety policy ensuring integration into business objectives and ensure adequate financial resources are provided. Review high level safety KPI's.

Departmental Heads:

Ensure safety management systems (competence, communication, controls) in place to safely implement the business plan.

Section Heads:

Active review of safety KPI's, providing management info. Operational health and safety planning/management.

Team Leaders/Supervisors:

Functional management of working conditions and employee safety performance or requirements. Feedback on operational misalignment with corporate plan.

These generic bandings specifically relate to OCDSEZD as follows:

7.1 Chief Executive Officer (CEO)

The CEO has responsibility for ensuring the development of an overall plan for monitoring and reviewing the performance of all functions and departments by:

(a) Assuming ultimate responsibility for health and safety;
(b) Understanding the main requirements of Omani legislation.
(c) Allocating the necessary resources for health and safety;
(d) Ensuring that the organisational structure is appropriate to manage health and Safety;
(e) Ensuring that the same management standards are applied to health and Safety as to other management functions;
(F) ensuring that health and safety is integrated into the management structure and that health and safety objectives are an integral part of the development plan;
(g) Ensuring that equal importance is applied to health and safety as to other Functions.

7.2 Senior Management Team

The Senior Management Team have responsibility for all matters relating to health, safety and welfare of all employees under their control. They also have responsibility for the safety of persons, who are not employees that may be affected by the actions or activities of the Company.
In addition to (b) to (g) above the Senior Management Team should:
(a) Ensure that health and safety is a standing item on the agenda for meetings;

(b) Ensure that the Statement of Policy is regularly reviewed and brought to the Attention of all employees;

(c) Co-ordinate, develop, maintain and monitor an efficient safety culture Throughout the organisation;

(d) Ensure that suitable and sufficient systems are implemented and maintained. This will include the provision of training in health and safety and risk Assessment where required;

(e) Ensure the development of Policies and procedures for health, safety and Welfare throughout the organisation;

(f) Periodically review performance, policies and procedures to ensure current Legislative requirements are being complied with as necessary;

(g) Ensure that safe systems of work are implemented, monitored, supervised and Regularly reviewed to minimise risk to employees and any other persons who May be affected by the activities of the organisation;

(h) Ensure that all risk assessments are carried out and control measures put in Place are monitored and reviewed;

7.3 Departmental Heads

Departmental Heads have responsibility for all matters relating to health, safety and welfare of all employees under their control. They also have responsibility for the safety of persons, who are not employees that may be affected by the actions or activities of the Company, including;

(a) Implementing the Health and Safety Policy by developing policies and procedures relevant to their function;

(b) Arranging for all staff under their control to be instructed and trained to identify hazards and reduce risk to a tolerable level, making use of specialist assistance if required;
(c) Ensuring that all required risk assessments are carried out and control measures are implemented, monitored and reviewed as necessary;
(d) Ensuring that all relevant information, instruction, training and supervision relating to equipment (including Personal Protective Equipment), is provided for staff within their managerial control;
(e) Monitoring the effectiveness of all health and safety procedures;
(f) Ensuring all staff under their control are adequately trained and supervised for the tasks that they are required to perform and that they follow approved procedures and safe systems of work;
(g) Stimulating interest and enthusiasm for the promotion of safety among their subordinates by regular discussions, meetings or example setting;
(h) Encouraging subordinates to communicate health and safety issues to their managers for which they cannot achieve a satisfactory solution with resources available locally;
(i) Ensuring that subordinates communicate health and safety matters to all staff under their control;

7.4 Section Heads

Section Heads have responsibility for all matters relating to health, safety and welfare of all employees under their control. They also have responsibility for the safety of persons, who are not employees that may be affected by the actions or activities of the Company; including:
(a) Implementation of the Health and Safety Policy relating to their function;

(b) That all personnel under their control are adequately trained and supervised for the tasks that they are required to perform;

(c) That monitoring of risk assessments is carried out, control measures introduced and reviews carried out as necessary to ensure compliance with health and safety requirements;

(d) That they develop strategies in support of the Health and Safety Policy, implement and where necessary, administer those strategies;

(e) That safe systems of work are implemented and supervised to reduce the risk of injury to employees and any other person who may be affected by the work activities;

(f) That all accident and near misses are reported and investigated in accordance with current procedures.

7.5 Team Leaders/Supervisors

Within their area of control all Team Leaders and other employees who may on occasion have supervisory duties, have a responsibility to ensure, so far as is reasonably practicable:
(a) Safe working procedures are incorporated into all areas of work;

(b) All personnel under their direct control are adequately trained and supervised for the tasks that they are required to undertake. Identified training needs must be directed to a line manager for action by the most appropriate means;

(c) Procedures that are in place for reporting any damage or defect to premises or equipment or are followed, and effective measures are taken to eliminate any hazards from areas where employees are working;
(d) All employees are issued with and make proper use of available personal protective equipment (PPE) as applicable to their work activity;

(e) Where visitors, contractors or members of the public enter the premises for the purpose of carrying out work, or for any other legitimate reason, they are made aware of any potential hazard;

(f) That an investigation and report on the causes and circumstances of accidents and injuries is carried out and a report made of unsafe conditions or near miss incidents.

7.6 Employees

Managing health and safety in the workplace is clearly a management function but to enable this to be carried out effectively, employees have responsibility to:

(a) Take reasonable care for the health and safety of themselves and of other Persons who may be affected by their acts or omissions;

(b) With regards to any duty placed on their employer, fully co-operate to enable that duty or requirement to be performed or complied with;

(c) Not interfere with anything provided in the interest of health, safety or welfare;

(d) Report any damage or defect to premises or equipment immediately to a supervisor/line manager;

(e) Wear Personal Protective Equipment when supplied, required, or directed by a supervisor, as appropriate to the work activity;

(f) Co-operate with management in all matters related to health and safety, including accident investigation and prevention;

(g) Be familiar with their duties, as outlined in the Health and Safety Policy.

7.7 Health and Safety Supervisor (50 or more employees)

To assist managers with ensuring that the workplace is a healthy and safe place, specialist, qualified Health and Safety Supervisors, directly reporting to senior management can:

a) Set up a plan for Occupational Safety and Health (OSH);

b) Develop procedures and processes to implement the H&S Policy;

c) Develop a work sites inspection programme;

d) Conduct risk assessments;

e) Monitor accident and occupational disease data and identify trends;

f) Carry out accident investigations;

g) Support the development of a safety culture;

h) Maintain records and prepare reports to advise senior management;

i) Follow up the provision of first aid materials and basic health care for workers including taking the injured to medical centres or hospitals if required;

j) Develop health and safety training programmes for workers;

k) Provide advice to managers on health and safety implications when
   a. Purchasing machinery, equipment or other materials and when new
   b. Processes are being developed;

l) Develop health and safety information and instruction signs for the workplace to ensure workers are kept fully informed on how to work safely;

m) Set up communication systems with representatives of the workforce to Inform the risk assessment process and ensure procedure validation;

n) Maintain an up to date knowledge of current best practice and legislation;

o) Ensure contractors are operating in line with OCDSEZD Policy;

p) Monitor the operation of all the elements of the safety management system and after review, implement revision where necessary.

8. ARRANGEMENTS

To support and enact the Policy Statement, various work systems and arrangements are required. The next section outlines steps necessary to satisfy each of the commitments in the Policy Statement and is aligned to the General Provisions contained within Ministerial Decree 286/2008, effective from 1st July 2008.

8.1 Risk Assessment

Policy:

(a) OCDSEZD is committed to reducing workplace risks through a systematic process of risk assessment;

(b) OCDSEZD will ensure that employees have the necessary skills and knowledge to carry out assessments appropriate to their work level;

(c) OCDSEZD will utilise the '5 steps' process outlined in the guidance to undertake this process;

(d) Risk assessment responsibilities have been assigned at each managerial level in the 'Responsibilities' section of this Policy;

(e) Managers will maintain records of the risk assessments and review them periodically or after a significant safety event;

(f) The workforce or those with specific knowledge of the activity being assessed, will be consulted during the hazard identification process;

(g) The significant findings of the risk assessments will be made known to the workers to enable them to operate more safely including any changes to processes and procedures identified;

(h) Any new equipment or process will be risk assessed before implementation or usage;

(i) Contractors will have to demonstrate that they have assessed risks for their own staff and others affected by their work, to at least the same standard as OCDSEZD.

8.2 Work Equipment

Policy:

a) OCDSEZD will ensure that all work equipment (including manual tools) Provided is:

   i. suitable for use, and for the purpose and conditions in which it is to be used;

   ii. maintained in a safe condition for use so that people's health and safety is not at risk;

   iii. Inspected, in certain circumstances, to ensure that it is and continues to be safe for use.

b) Where inspections are necessary, they will be carried out by a competent
c) Person and records will be kept of inspections;

d) Appropriate storing facilities (such as leather bags or boxes designed for the
e) Purpose) will be provided for workers who use multi manual tools in movable Sites;

f) Where movable ladders are used, they will be rust protected if necessary and must be fixed in position whilst being used, with the base of the ladder a quarter of its working height from the wall. They will not be used on slippery floors and must not be stored in passageways;

g) Machinery fitted with safeguards will not be operated if these are missing;

h) Fixed fencing will be provided to adequately protect workers from rotating parts of a machine. If this is not possible due to the nature of the operation process, other safety mechanisms such as overlapping rails or light beam cut outs (regularly checked) will be used;

i) Risks from vibrating machinery will be reduced by solid fixing on a vibration
j) Absorbent material, where practicable;

k) All workers will only operate machinery they have been trained to use;

l) Where necessary, suitable personal protective equipment will be provided free of charge;

m) The use of heavy, unbalanced or unwieldy machinery will be avoided unless The risk of injury whilst manual handling the equipment has been reduced by Mechanical means;
n) When maintenance is required, a plan will be developed to ensure that the Maintenance can be completed safely without unexpected risks developing. Manufacturer's instructions will be followed where possible;
o) Lift tools operators will have a driving licence unless in training;
p) All lift tools will be tested at the recommended intervals appropriate to their expected use and records kept.
q) Adequate signage will be provided relating to their safe use;
r) The Lifting Operations and Lifting Equipment Regulations 1998
s) Will apply to all lifting operations. Lift tools will be conforming to Recommended design specifications and have appropriate safety Precautions incorporated into them;
t) Safe working practises will be operated whilst using lift tools Further information and procedural guidance regarding Paragraphs (l) to (o) on lift tools, is attached at Appendix 1;
u) Forklift trucks will conform to design requirements and only be Operated by competent persons who have been trained and have a valid licence;
v) Vehicles will undergo a systematic check before use to ensure safe operation;
w) A safe system of work will be developed to ensure operator and other workers are not at risk (further information and procedural guidance regarding
x) Paragraphs (p) to (r) on forklift trucks, is attached at Appendix 2);
y) Any contractors working on the Duqm project will be required to satisfy as a minimum the standards set here and if necessary demonstrate this either by documentary evidence or practical demonstration.

8.3 Training and Supervision

Policy:

(a) OCDSEZD will ensure that all staff are trained and have the necessary skills and knowledge to enable them to carry out their work safely and effectively and develop a plan of training;

(b) We have identified key stages where knowledge, skills and understanding may need to be developed through appropriate training to ensure safe practise:

1. Induction (commencement of employment)

2. Promotion

3. Role change (new responsibilities)

4. Introduction of new technology or equipment

5. Demonstration of poor performance

6. Return to work after prolonged absence

(c) Line managers will monitor the training needs of staff under their control, including new employees and arrange for suitable training to be carried out where necessary;

(d) We recognise that accidents and ill health at work can be reduced by having a 'competent' workforce who operates safely;

(e) Adequate supervision, by trained supervisors who fully understand health and safety procedures, will always be available, particularly to staff who have been through one of the key stages above, are young or have special needs;

(f) To ensure the development of a safety culture, key managers and staff will be identified to receive training in health and safety management and risk assessment;

(h) Any contractors working on the Duqm project will be required to satisfy as a minimum the standards set here and if necessary demonstrate this either by documentary evidence or practical demonstration.

8.4 Accident Reporting and Investigation

Policy:

(a) We are committed to reducing accidents and ill health in the workplace and recognise that understanding the causes of accidents will help improve safety systems to prevent recurrence;

(b) All accidents must be reported immediately to a line manager or supervisor, who will complete the accident report form and carry out an investigation;

(c) The accident report form must be forwarded to OCDSEZD offices for the attention of the Health and Safety Advisor by the end of the working shift;

(d) Serious accidents must be reported by the supervisor immediately (fastest available means) to OCDSEZD offices, OSH department, who will attend to conduct an investigation;

(e) If the accident is serious, once the injured worker has received appropriate medical treatment and any dangerous conditions have been neutralised, the area around the accident scene must be cordoned off with everything left in situ;

(f) If the accident is serious the HSE department of the Directorate General for Labourers' Welfare must be notified within 24 hours, in writing;

(g) Any dangerous occurrences that may not have led to injury but could have done should be recorded on the appropriate form and reviewed by managers to determine cause and measures to be put in place to prevent recurrence;

(h) Prominent signage will be provided in workplaces reminding workers of their responsibility to report accidents;

(i) Supervisors and line managers will be adequately trained to investigate accidents, commensurate with their seniority and seriousness of the accident;

(j) Accident records will be kept for 3 years in a safe environment;

(k) The relevant risk assessment relating to the accident situation must be reviewed and revised appropriately;
(l) Managers will review accident statistics periodically to identify trends and areas for improvement in safety management systems or equipment provision;

8.5 Incident rate calculations and investigating Procedure

Itispossibletouseprobabilityratiosforanyincidentwherethereisinformation aboutthenumbersofboththeincidentitselfandthetotalnumberofeventswithi nwhichtheincidentoccurs.Wecouldthereforeestablishtheprobabilityofanac cidentcausing serious injury as follows:

LTI Frequency Rate (LTI FR):

$$\frac{\text{No. of Lost Time Injury x 200,000}}{\text{Total Man-hours Worked}}$$

Total Recordable Injury Rate (TRIR):

$$\frac{\text{Total Number of Recordable Cases x 200,000}}{\text{Total Man-hours Worked}}$$

Severity Rates:

$$\frac{\text{Total Lost Man Days x 200,000}}{\text{Total Man-hours Worked}}$$

Mean Duration:

$$\frac{\text{Total Lost Man Days}}{\text{No. of Lost Time Injury}}$$

	INCIDENT RESPONSE AND INVESTIGATINSD PROCEDURE
Responsible person	**Action**
Employee	1. Report all incidents to supervisor/line manager 2. Give first aid if qualified
Supervisor	1. Go immediately to incident site and take control 2. Give emergency care to injured 3. Send specific person to call the emergency response units needed 4. Act to prevent secondary incidents 5. Identify witnesses and preserve evidence at scene 6. Evaluate loss and potential loss 7. Notify line management as appropriate
Line Management	1. Evaluate loss and potential loss 2. Notify safety coordinator and verify that an investigation is appropriate 3. Respond to incident site as appropriate to take charge of investigation 4. Determine if work is to be resumed or stopped for the investigation actions
Safety/Advisor	1. Advise/Manager of incident and the appropriate notification and investigation procedure 2. Notify investigation team members to respond to scene or assembly point 3. Notify government agencies as required
Investigator	1. Interview witnesses 2. Map and photograph incident scene 3. Examine equipment and materials involved 4. Examine related records 5. Determine process 6. Analyze causes 7. Develop remedial actions 8. Write report of findings and recommendations
Manager at next level	1. Review adequacy of the investigation 2. Approve or revise recommendations 3. Budget resources for remedial actions 4. Direct lateral applications of the findings 5. Direct follow –through staff actions

8.6 Occupational Health and Medical Care

Policy:

(a) OCDSEZD will promote healthy living by providing information to workers on healthy food and physical activity in the workplace and on smoking cessation;

(b) Smoking in the workplace is prohibited;

(c) Managers and supervisors will be trained in how to identify at an early stage the signs of workplace psychological stress or ill health;

(d) Managers and supervisors will look out for signs of psychological ill health, unstable workers or workplace conflict and take steps to remedy the situation by giving them special attention when new to the workplace, or changing their work and involving them in decisions where possible;

(e) Workers nominated for work in conditions where they may be exposed to any of the 'specified occupational diseases' (Ministerial Decree 286/2008), will undergo medical examination appropriate to the nature of their work, to ensure their capability to work and these examinations will be periodically repeated;

(f) If any of the above category (e) of worker's health indicates that a medical examination is required sooner than the periodical examination, then this will be provided;

(g) Workers who contract an occupational disease will be moved out of the source of the disease either by giving them sick leave or by changing their workplace, if the medical authorities see that continuing work will be dangerous to their health;

(h) In the case of (g) above, the sick person will be assigned to perform another work suitable to their health condition, if the medical authorities recommend that;

(i) No worker with an occupational disease will be reassigned to work unless medical tests prove that they are medically fit to perform work;

(j) Medical tests for this specific group of workers will be provided free of charge and the worker will not be deprived of their wage for the time spent in medical tests;

(k) Workers who expose themselves to biotic hazards will be vaccinated, as seen necessary, against contagious diseases that transfer from animals or previously exposed humans, according to the nature of their work;

(l) Medical examinations will be carried out on workers exposed to contagious diseases when they are moved from one job to another or at the end of their service;

(m)The results of the medical tests will be kept in the worker's file and maintained even after the end of the worker's service;

(n) Absence data will be reviewed and monitored to identify trends in worker absence from work with relation to ill health and action taken as appropriate;

(o) Workers must inform their supervisor or line manager of any psychological problems they occasionally or permanently suffer that may affect their performance at work in terms of safety;

(p) Women will not be employed in any conditions that may expose them to materials, factors or occupational practices that contradict women's' psychological capabilities or directly or indirectly lead to negative impacts on the safe delivery of children or the health and safety of the foetus or infant;

(q) Handicapped workers will not be assigned to any work or occupational practices that are outside their capacity to perform work in a safe manner;

(r) Workstations, procedures and equipment will be modified where necessary, to take account of the handicapped worker's needs to prevent or minimise fatigue or the hazards the handicapped worker may be exposed to during work;

(s) First aid boxes will be provided at every work location with suitable provision to enable first aid medical care to be administered and these boxes will be prominently displayed and water tight;

(t) Contractors must demonstrate that they have adopted at least the same standards described in this Policy.

8.7 Welfare Facilities

Policy:

(a) OCDSEZD will take all necessary actions to ensure that conditions prevailing in the facilities of the workplace are sufficient for safekeeping the safety and health of workers particularly with regard to:

1. Provision of toilets;
2. Workers' sleeping places;
3. Places for serving food;
4. Clothes changing places;
5. Rest rooms.

The specification for each of these is at Appendix 3.

(b) Supervisors will monitor the provision of these facilities to ensure they are Maintained;

(c) Contractors must demonstrate that they meet at least the standards outlined in This Policy.

8.8 Safe Work Sites

Policy:

(a)All employees on site and offices abide by the following;

Suitable work dress and PPE related to the work all employees must be worn at site and offices
safety Helmet:
White with OCDSEZAD logo for all levels of OCDSEZAD staff.
Safety boots:
with toe and sole protection.
work dress:
Blue trouser &Jacket with long sleeve.
No exception for any employee for work dress and PPE but for Administrators Employees Omani Dishdasha and Tarpan (National Uniforms)
Non- compliance of the above site rules will result in disciplinary action against the violator

- ✓ *1st offence: written warning letter.*
- ✓ *2nd offence: final written warning letter.*
- ✓ *3rd offence: off from Site and OCDSEZAD.*

(b) All work sites, its buildings, materials and all the equipment used will conform To the relevant technical specifications;

(c) Size of buildings will be adequate for the size of the operations being Executed;

(d) Manual handling of heavy items will be reduced by design of site or by mechanising handling operations;

(e) In work rooms, workers will have sufficient space;

(f) Floors in buildings will be designed so as not to cause a trip or fall hazard, being smooth and non-slip;
(g) Drainage ditches will be adequately fenced or covered;

(h) Walkways and passages around machinery will be clearly marked to allow unobstructed movement and separate ingress and egress will be signposted to reduce accident risk;

(i) Storage areas will be clearly indicated and well designed to allow safe access;

(j) Suitable and sufficient emergency exits will be provided in all workrooms to allow efficient escape for the number of workers in the room and they will be clearly marked;

(k) Areas where there is work at height, will have adequate fencing, non-slip flooring, suitably designed access and good lighting;

(l) Where workers are seated to work, they will be provided with ergonomically suitable chairs;

(m) Any water pools close to work areas will be filled with earth;

(n)The guard must be provided with an adequately furnished room with AC and toilets (if the toilets are far away);

Detailed specifications for (a) to (m) above are at Appendix 4.
(o) Workplaces will be adequately illuminated and monitored to ensure no deterioration through lack of maintenance, with back-up system if the normal lighting fails;

(p) Workplaces will be adequately ventilated to avoid 'bad air', with local ventilation in areas where pollution exists;

(q) Exposure to temperature extremes will be avoided by restricting working hours or, more preferably, designing it out mechanically;

(r) Exposure to excessive noise levels will be controlled by engineering methods where possible but if necessary, by reducing exposure time or providing PPE and instruction signs;

(s) Clean drinking water will be provided supported by a colour coding system to ensure the drinking supply is easily identifiable and maintained clean. Adequate numbers of water coolers will be provided for the number of staff;

(t) Periodic inspections will be carried out to ensure the implementation and maintenance of the safety features outlined in the foregoing paragraphs;

(u) Contractors will be expected to maintain their workplaces to at least the same standard as this Policy.

Detailed specifications for (n) to (r) above are at Appendix 5.

8.9 Fire Safety and Emergency Procedures

Policy:

Emergency response program

An Emergency Response Plan will be developed covering potential emergency scenarios at ODCSEZAD duqm and head office in Muscat. Details of the plans for ODCSEZAD and office will be in place prior to the commencement of formal training at the ODCSEZAD and will be developed in conjunction with the Client's (SEZAD) Emergency Response Plan for ODCSEZAD level.

The plan will detail specific responses to the following occurrences:

- major fire
- major road accidents
- serious injuries or fatality resulting from an accident
- response to training emergencies

8.9 .1 Identification of an emergency

A situation which has the potential to be classified and treated as an emergency may become apparent in any of the following ways:

I. an incident that has occurred in which employees have sustained injuries, resulted in death or significant property damage has occurred
II. an automatic warning device has been activated by fire, smoke or gas detection
III. a warning device has been manually activated to raise the alarm

IV. a fire or gas emission has been discovered and a manual alarm has been activated

V. an individual is aware of a dangerous situation but unable to raise a general alarm

Assuming that the situation is of such a magnitude that the individual who first becomes aware of it cannot safely provide immediate assistance to all personnel who may be injured or in imminent danger, then that person's responsibility is the immediate sounding of a general alarm (if available) and notification of a more senior person of the specific location and facts of the incident.

Notification to senior management should be done by the person who initiated the alarm. For emergencies on any ODCSEZAD the notification must be communicated to the ODCSEZAD Manager or another predetermined level if the more senior people are not readily available. This person must assess the seriousness of the situation to determine if an actual emergency exists and whether persons/authorities off site are to be contacted. It is better to overestimate the seriousness of the situation than to underestimate or ignore it.

The type of emergency should be categorized as follows:

Minor - Restricted to the work undertaken within the confines of the ODCSEZAD and can be controlled using available resources at the ODCSEZAD.

Moderate- On-ODCSEZAD emergency response organization cannot bring situation under control. Assistance is required from outside Emergency Response Organizations such as fire fighters, ambulance, Royal Omani Police, SEZAD. All but essential personnel shall be evacuated from the area.

Major- Requires help from outside Emergency Response Organizations. General area evacuation may be required. The area evacuation may be required to be coordinated through an Area Emergency Response Organization with assistance from an on-ODCSEZAD group.

8.9.2 Notification

Once the type of emergency has been determined and the extent of any immediate injuries assessed, the Senior ODCSEZAD Representative (ODCSEZAD Emergency Coordinator) shall begin the notification process. This notification shall be delegated as much as possible to allow the Emergency Coordinator a chance to continue organizing ODCSEZAD response. The order of notification would generally be as follows:

- ambulance if employees are injured
- fire fighters (if applicable)
- Royal Omani Police
- hospital (to prepare for arrival of injured)
- project Emergency Response Coordinator
- senior ODCSEZAD and Client personnel who continue the corporate notification process

A typical notification flow chart will be provided. ODCSEZAD specific notification flow chart to be provided in emergency response manuals should list actual names in addition to responsibilities.

Telephone numbers of all key contacts shall be provided on the notification flow chart which should be prominently displayed at all ODCSEZAD telephones, in the ODCSEZAD office complex and on bulletin boards. Emergency telephone lists shall include, at minimum, the following:

1) ODCSEZAD
    - CEO
    - Senior HSE Specialist
    - Senior Engineers Manager
    - PIS
    - HSE Safety Officer

2) Royal Omani Police
   - Civil Defense Emergency Number
   - Fire Chief
   - Ambulance Service
   - Doctors
   - Work (Clinic)
   - Duqm Hospitals
   - Local Emergency Response Organization

8.9.3 General Evacuation Plan

A general evacuation plan is to be provided for all ODCSEZAD venue as part of the Emergency Response Program. The purpose of the plan is to provide for the quick, safe evacuation of all employees in the event of an emergency and to establish the necessary teams and equipment required to respond to the emergency by rescuing personnel, administering first aid and accounting for all personnel at assembly points.

General evacuation plan shall go into effect upon the sounding of an alarm, which may be triggered:

1) automatically by fire or gas, smoke detectors
2) manually by an individual hearing a fire alarm or noting an incident requiring evacuation
   (Activate alarm by breaking glass or from control panel – press "sound alarm" button
3) Manually by a Senior ODCSEZAD Representative in control during an emergency who has decided that evacuation is necessary.

The evacuation plan shall include:

- a checklist for securing any equipment or work in use at the time of the evacuation signal
- a list of assembly areas to which employees are to go in the event of an evacuation signal

- map(s) showing assembly areas and routes
- a system of accounting for all employees at assembly areas (use attendance registers)
- a criterion for confirming the safety of the work ODCSEZAD prior to allowing employees to return to work
- a system of signals for evacuation for test and for all-clear"
- a plan for practicing evacuations and testing the suitability of the accounting system
- a plan for checking the availability and operability of emergency responders and equipment on a frequent basis.

ODCSEZAD evacuation plans shall be posted in conspicuous places, available to all employees and. Employees shall be advised of the existence and location of the plans.

8.9.4 ODCSEZAD Fire Wardens

1. Upon hearing the Building Fire Alarm Fire Wardens must wear fluorescent Jacket and start evacuating all occupants of the area/floor/building to the nearby Safe Assembly Point. Check all the rooms including prayer room, toilets and search for personnel including visitors.
2. On discovering Fire, assess the fire. If you feel the fire is too large to extinguish with a portable extinguisher, close the door(s) and window(s) where the fire is located. This will restrict smoke and heat travel and keep escape routes clear.
3. Sound the alarm at the nearest Manual Call Point (break-glass alarm point).
4. Fire Wardens are responsible to carry out the head count of personnel in respective area/floor/building and report to the Chief Fire Warden.

8.9.5 ODCSEZAD Emergency Response Requirements

The employees will be required to become familiar with the ODCSEZAD Emergency Response Program and evacuation procedures and assist response measures in the following ways:

- advise all employees and visitors of the existence of these Procedures
- assist with evacuation practice and equipment tests
- maintain daily employee's attendance lists to be used in the Event of employees accounting at assembly areas during Evacuation.
- assist with notification, first-aid, securing of working venue, Etc. during an emergency as indicated in the ODCSEZAD Emergency Response Plan Manager or other person Designated as the ODCSEZAD Emergency Coordinator.

8.9.6 A Fire Risk Assessment (FRA)

will be carried out at each of our workplaces, including offices, to determine the fire hazards, who might be at risk and what measures are in place to control the risk. The FRA will determine the extent of the following provisions;

(b) Buildings will be constructed of fire-resistant materials with fire separation between areas of different risks;

(c) Emergency exits will be provided that are of sufficient number and size to allow for the rapid evacuation of all workers in case of fire and lead to a place of safety. They will be located to ensure that alternative exit is always available;

(d) These emergency exits will be illuminated and clearly signed, from all parts of the workplace, free from obstructions, easy to open without a key or similar device

and open outwards. Passageways leading to the emergency exits will be clearly indicated, obstruction free, of sufficient width to allow the free flow of workers to the emergency exit and in high risk areas, no less than 75cm.;

(e) The illumination will be sufficient to safely progress to and exit from the emergency exits. It will be capable of working even if the main powers supply fails and will keep working long enough for all workers to exit;

(f) Notices will be provided, as determined by the FRA, giving instruction on what to when a fire occurs and relevant assembly points for staff to go to when evacuated;

(g) Adequate numbers of suitable fire extinguishers will be provided that are easily accessible, appropriate to the workplace risk, well maintained and tested at least 6 monthly. The test results will be kept in a special record. In areas of high corrosion risk, non-corrosive extinguishers will be provided;

(i) In each location, a sufficient number of staff will be trained in 'what to do in case of fire' including the effective operation of fire-fighting equipment and summoning further assistance if necessary;

(I) Means for giving warning in case of fire will be provided at each location and be appropriate to the size and risk of the premise and capable of being heard in all areas, even if it is a noisy environment. In areas where explosive or highly combustible substances are kept or used, automatic fire detection systems will be installed;

(j) Only flammable or noxious substances that are actually required for the work activity will be kept and all others disposed of;

(k) Highly flammable substances will be kept in separate, secure containers or stores that have approved automatic suppression and isolation systems, are well ventilated, have external power cut-off switches and are protected from direct sunlight. The stores will be monitored to ensure capacity is not exceeded and will be marked to indicate the category of substance and firefighting medium to be applied. No ignition sources will be allowed in these areas;

(l)Any flammable waste products will be regularly disposed of to prevent unnecessary accumulations;

(m) Pressurised air and gas cylinders will be kept upright, with the valve upwards and secured at the head to prevent falling over;

(n) Cigarette lighters and matches are prohibited in workplaces;

(o) Hot pipework will be covered in an insulating material;

(p) All measures implemented and the FRA/ERP will be monitored and periodically reviewed, with revisions as necessary;

(q) In office based work situations, all staff will be trained in fire emergency procedures with some staff being trained as Fire Wardens who carry out periodic practise drills;

(s) Contractors will be expected to adhere to at least the same standards outlined in this Policy.

8.9.7 Sea Port Works

Policy:

(a) On sea ports, workers will not be tasked to work before they are competent, properly trained and have passed an approved training course, with proof being included on the works register;

(b) All lifting equipment will be suitable for the loads expected to be lifted by that equipment;

(c) Lifting equipment will be examined before use when used for the first time by a competent person and a structured programme of equipment identification, testing and maintenance will be developed for all lifting equipment and records kept securely;

(d) The safe working load (SWL) will be clearly marked on all lifting equipment and associated accessories such as slings, clamps etc.;

(e) All lifting operations will be planned and well supervised by a competent person to minimise any risk of injury, taking account of the hazards associated with the load being lifted;

(f) All lifting equipment will be positioned to minimise the risk of injury to workers by falling objects etc.;

(g) The safety instructions for lifting equipment will be clearly and permanently attached to the equipment in a language that can be understood by users of the equipment;

(h) Maintenance procedures will be developed to ensure that risks to those carrying it out are minimised including, use of guarding, isolation and permit to work systems if required;

(I) Hazardous materials will be clearly marked and well packed. If there is damage, the area around the lift must be cleared until complete;

(j) Areas containing gases, vapours or dust will have a suitable mechanical ventilation system and work in confined spaces or stores will be rigorously controlled by a safe work system;

(k) All staff will be fully trained in how to carry out safe lifting operations and will periodically undergo refresher training to ensure maintenance of skills;

(l) All contractors operating within this development project will have to demonstrate they comply with the standards prescribed in this Policy.

8.9.8 Personal Protective Equipment (PPE)

Policy:

(a) PPE will only be used when other controls are not practicable and risks remain, as a last resort;

(b) Where PPE is required, it will be provided, free of charge;

(c) PPE will comply with the appropriate regulations and have certificates of conformity i.e. 'CE' marked;

(d) PPE will be appropriate to the nature of the work and hazards encountered;

(e) PPE will suit the wearer in terms of size, weight and fit;

(f) If more than one item of PPE is required to be worn together, they will be compatible and maintain protection;

(g) All staff will be trained in the use of their PPE, including how to take it off without contamination, why they need it, what its limitations are and how to store and maintain it;

(h) All areas requiring PPE will be clearly signposted in appropriate languages;

(I) A system for inspection, maintenance and cleaning/repair will be developed, including the identification and tracking of individual items of PPE;

(j) Special precautions for decontamination and cleaning/disposal will be put in place where the PPE may be contaminated by materials hazardous to health, such as chemicals or bio-hazards;

(k) The workplace will be monitored to ensure PPE is correctly used, even for small tasks taking a short time and by visitors;

(l) All contractors must comply with the standards in this Policy.

8.9.9 Special Precautionary Measures

The following sub-sections highlight areas considered in addition to the more general controlling of risk in all workplaces through a robust risk assessment system:

Policy:

8.10 Construction, Drilling, Demolition &Civil Engineering

(a) A competent person will supervise all these operations;

(b) In trenches or holes the sides will have appropriate angle of inclination to the type of soil;

(c) If the depth is greater than 1.5 metres, the sides will have adequate supports, and signage will be provided around the works. Accumulations of soil and dust will not be permitted close to the sides of trenches and holes;

(d) Works will be damped down using water spray to minimise dust and PPE provided when necessary;

(e) Demolition works will be undertaken in a systematic method starting at the top and safety precautions put in place to prevent injury from falling objects or collapse of unsupported structures;

(f) Scaffolding will be provided for prolonged work at height, with the scaffolding being suitable for the purpose, supervised by a competent person, regularly inspected and maintained;

(g) Wheeled scaffolding towers will be only used on a flat surface, have wheel locks in place and weighted at the base before use;

(h) Access ladders will be secured and have intermediate landings where necessary to prevent falls;

(i) Holes in roofs and floors at height will be edge protected;

(j) Internal combustion engines will have exhausts that expel the products of combustion into open air;

(k) Adequate lighting will be provided to illuminate walkways and hazardous areas;

(l) Manual handling of heavy loads will be minimised;

(m)Workplace risk assessments and hazard spotting will be carried out to identify hazards and control them, including nailed boards;

(n) All contractors will have measures in place to satisfy the strategic standards in this Policy.

8.10.1 Agricultural Tools and Machinery

(o) Agricultural tools and machinery will be designed to provide clear vision from driving positions, comfortable seating, and first aid kit and water dispenser (bulldozers and ploughs). Only the driver will be allowed on the machine unless there is an additional seat;

(p) Hazards such as flammable dusts and electricity will have suitable control measures in place;

8.10.2 Manual Field Works

(q) Workers will be provided with rest and bathing areas and protected against the sun heat, with stairs provided for fruit plucking or tree cutting at height.

8.10.3 Insecticides and Fertilizer Usage

(r) Before using the above, the operation will be risk assessed to ensure workers can operate safely, taking account of preparing the insecticide and wind direction etc. Buildings will be adequately prepared before commencement, including evacuation when necessary;

(s) First aid kits and protective masks will be provided;

(t) Stores will have adequate ventilation and lighting;

(u) Unused materials will be disposed of so as not to damage the environment;

(v) Signage will be used to warn of the operational activity.

8.10.4 Animal Breeding

(w) Cattle and poultry yards will be built of durable materials and well-lit and ventilated. Floors will be made of concrete and cleaned regularly along with the walls, roofs, feed areas and drinking basins;

(x) Animal health will be monitored, isolating sick ones and rapidly disposing of dead animals by burning or burying them and the protective clothing if it was a communicable disease;

(y) Fodder will be kept dry and monitored for fermentation and preventative measures against mosquitoes and rodents implemented;

(z) Eating and drinking will be prohibited inside yards, including milk direct from the animal.

Appendix 6 provides more detailed operational processes relating to each of the foregoing sub-sections, as prescribed by the Ministerial Decree.

8.10.5 Chemicals

Policy:

(a) OCDSEZD will always assess the usage of any chemical to determine if an alternative exists for use that does not pose a hazard to health;

(b) Permits will be obtained, when required, before using, storing or disposing of chemicals;

(c) A register will be maintained of hazardous substances including safety measures and no chemical will be used until this information is available;

(d) Work systems will, as far as is practicable, avoid worker exposure to hazardous substances;

(e) Information as to the hazards, protective measures and first aid action in case of contamination, will be provided with the chemical and all workers given this information;

(f) Chemicals will only be stored in appropriate containers or reservoirs with clear labelling indicating; name of substance, its compounds, trade mark, hazards, safe usage instructions and first aid action;

(g) All those working with the chemicals, will be trained in how to handle the chemical, what safety measures to adopt, the use of PPE, what first aid action to take and how to raise the alarm if a significant leak occurs;

(h) Environmental monitoring will periodically be undertaken to make sure levels of chemical within the air are within limits laid down by the relevant authority;

(i) Decontamination facilities will be provided at work sites to prevent circulation of polluted clothes and allow for their disposal;

(j) Premises or work sites will be designed to keep chemicals away from administrative areas;

(k) Workers are instructed to keep away from the chemicals if they are not involved in their use or not trained in what to do;

(l) PPE will be provided, suitable for the relevant chemical and facilities for storage and cleaning made available. (See PPE section);

(m)If the hazard level is so high, an Emergency Response Plan (ERP) will be developed;

(n) The workplace will be monitored to ensure that safety systems are being correctly implemented;

(o) Workers who have been exposed to chemicals will be monitored under the Occupational Health Policy and records kept;

(p) All contractors will have to demonstrate conformity to at least the same standard as this Policy.

8.10.6 Radiation, Carcinogens and Asbestos

Policy:

(a) Where practicable, exposure will be avoided by not having any of these harmful agents in the workplace;

(b) If this is not practicable, suitable mechanical methods such as protective fences, secure cabinets or LEV will be employed to prevent exposure;

(c) If risk residue levels are intolerable, work systems will be developed to reduce the level of exposure, time exposed and the numbers exposed. These systems will be supported by adequate signage giving appropriate warnings;

(d) PPE will be provided where work systems cannot reduce the risk sufficiently and will be subject to the PPE Policy;

(e) Relevant staff will be fully trained in all aspects of dealing with these agents;

(f) Contaminated PPE will be disposed of safely and without detrimental effect on the environment;

(g) Air monitoring will be undertaken for asbestos to periodically measure the concentration levels in the air and records kept and reviewed for as long as the establishment continues work;

(h) Monitoring will be undertaken to ensure that levels of exposure laid down by the regulatory authorities are not exceeded;

(i) Contractors must adhere to at least the same standards as those in this Policy.

8.10.7 Electricity

Policy:

(a) All electrical installations will be carried out by a competent person and conform to the relevant standard;

(b) Electrical installations will be well maintained and records kept of inspections;

(c) Adequate and clear information will be provided adjacent to any source of electrical risk regarding the suitable safety measures to be adopted;

(d) Any work carried out on electrical installations or equipment will only be commenced when the power has been shut off. If the work is on large installations, a Permit to Work system will be employed;

(e) All electrical equipment or installations in areas where there are flammable atmospheres will be designed to be intrinsically safe and not allow any spark to interact with the atmosphere. Additionally in these atmospheres, risks from static electricity will be minimised by providing suitable earthing arrangements or insulating materials;

(f) Electrically operated work tools will be well maintained and tested with, where possible, transformers being used to reduce the voltage of the electricity supply. If this is not possible, then Residual Current Devices (RCD) will be utilised;

(g) Cables will not be installed within 1 metre of hot items such as ovens, to prevent insulation degradation;

(h) Adequate numbers of sockets will be provide to prevent overloading;

(i) Risk assessments and work systems will take account of the risk from making contact with overhead cables by machinery or ladders and of humid atmospheres etc.

8.10.8 Control of Contractors

Policy:

General

(1) The Contractor shall be responsible for the safety of the Works, including the safety of the public and his workers, and of any existing structures, buildings, utilities and other existing features.

(2) The Contractor's staff, workers, sub-contractors and all other parties involved in construction activities at all work sites (referred to hereafter as "the Site") shall consider the safety of themselves and others at all times. In this respect, this section of the Specifications is intended to describe minimum requirements and to act as a guide for effective HSE practice on Site. It is not fully comprehensive and the Laws, Legislation and other rules shall be referred to and complied with. This section is not intended to relieve the Contractor of any of his responsibilities for workplace safety and health.

8.10.9 Submittal Requirements

(1) The OCDSEZAD's approval shall be required prior to proceeding with the work. The submittals shall be prepared to comply with the requirements described in part (2) below. The following details shall be submitted to the OCDSEZAD for approval.

  (a) The Contractor's Safety Management System (HSE policy);
  (b) Employees' CVs of the Workplace HSE Officers or Coordinators appointed to supervise and enforce the safety provisions at the Site.

(2) The Contractor's Safety Management System shall be submitted to the OCDSEZAD no later than 30 days before construction activities are scheduled to commence. The Contractor shall not proceed with any part of the work without an approved Safety Management System.

8.11 Workplace HSE Legal Requirements

(1) The Contractor shall comply with all applicable safety, health and environment requirements of the Workplace HSE and other new acts and regulations of Oman which may be gazetted during the Contract period including any amendments or re-enactments thereto, including but not limited to:

(a) Excavation Permit from OSS.
(b) Environmental Permit from environmental department.
(c) Environmental Impact Assessment (E.I.A)
(d) Fire Precautions for Labour Camp permit from civil defence
(e) Safety &Security permit from civil defence.
(f) Lifting machine (LM) certificate as tower, mobile or crawler crane.
(g) The Electrical approved license.

(2) In addition, the Contractor shall ensure that all work activities under his control are carried out to the occupational safety, health and welfare standards, as contained in this Specification and supporting documentation, even where these impose a higher standard than that required by current Oman legislation.

(3) The Contractor shall be responsible for ensuring that their sub-contractors and all persons entitled to be on the Site comply with all relevant legal requirements and with the standards set out in this specification and supporting documentation.

8.11.1 Workplace HSE(Construction) Regulations

(1) HSE management System

The Contractor shall put in place a HSE management System and conduct a review of the System at least once in every six months.

(2) Site Co-ordination Meetings

The Contractor shall conduct regular site safety co-ordination meetings to be chaired by the Contractor's Project Manager.

8.11.2 Permit-to-work System

The Contractor shall implement a Permit-to-work System for the following activities. The Contractor shall identify work risks and ensure necessary precautions are taken and enforced before allowing work to be carried out.

(a) excavation and trenching work exceeding 1.5m in depth;
(b) tunnelling work;
(c) lifting operations involving tower, mobile or crawler crane;
(d) work at a place where a person is liable to fall a distance of more than 2 metres;
(e) demolition work;
(f) any work to be carried out in a confined space;
(g) Hot work.

8.11.3 HSE Training

The Contractor shall ensure that each person employed to oversee and supervise any work or process carried out on the Site has received adequate HSE training for the purpose of ensuring that the work or process he oversees or supervises is carried out safely.

8.11.4 PROFESSIONAL Engineers Undertaking Design of Temporary Works

The duties of the Professional Engineers undertaking design of Temporary Works (such as road diversion)shall include the following:

(a) to ensure his design can be executed safely;
(b) to provide design documentation;
(c) to ensure that it is constructed in accordance with his design;
(d) to issue a certificate that it is safe for its intended use.

8.11.5 Penalties

(a) The Contractor is drawn to the attention that penalties are imposed for contravening the Regulations.

(b) Any person who contravenes any provisions of these Regulations which impose a duty on him shall be guilty of an offence and shall be liable on conviction *to a fine not exceeding OR--300-*

8.11.6 Workplace HSE Officer (WHSE) for 50 or more employees

(1) The Contractor shall engage at least one full-time Workplace HSE (WHSE) Officers who have relevant experience in the work of the Contract to be performed.

(2) The WHSE Officer shall be qualified persons who are registered with the Ministry of Manpower and who have undergone safety courses approved by the Commissioner for Workplace Safety and Health. The Contractor shall submit a copy of the registration certificate of the WHSE Officer to the OCDSEZAD before the start of any work on site.

(3) The WHSE Officer shall conduct daily checks to ensure that safe working practices are complied with and he shall promote safe conduct of work generally within the site.

(4) The duties of the WHSE Officers shall include the following:

i. to assist in the identification and assessment of foreseeable risks;
ii. to recommend reasonably practicable measures to eliminate or mitigate foreseeable risks;
iii. to recommend reasonably practicable measures to minimize the risk; and safe work procedures to control the risk;
iv. To assist in the implementation of such reasonably practicable measures and safe work procedures.

8.11.7 Penalties

(a) The Contractor is drawn to the attention that penalties are imposed by WHSE (WHSE Officers).

(b) Any WHSE Officer who contravenes (duties) shall be guilty of an offence and shall be liable on conviction: for a first offence, to a fine not exceeding OR150; and for a second or subsequent offence, to a fine not exceeding OR300.

8.11.8 Safety Enforcement

(1) The Contractor shall be responsible for enforcing safety rules and regulations upon its staff, workers, subcontractors and all other persons entitled to be on the Site.

(2) In addition to enforcement procedures stated in the Acts and Regulations, the OCDSEZAD may require the removal from the Site of any person who, in the opinion of the OCDSEZAD, fails to observe safety procedures. Personnel who have been removed for these reasons shall not be again employed on any of the Sites without the written approval of the OCDSEZAD

(3) If deemed necessary, the OCDSEZAD shall be entitled to engage an independent external auditor to audit the Contractor's Safety Management System and the Contractor shall provide all necessary attendance and information for the audit checks.

(4) The Contractor shall periodically review and evaluate the efficiency of the Safety Management System in place.

(5) The audits and possible corrective actions shall be carried out in accordance with the documented procedures.

(6) The results of audit and corrective actions shall be submitted to the OCDSEZAD and to the attention of all sub-contractors.

8.11.9 Safety Management System

(1) *The Contractor shall develop and implement a project specific Safety Management System for the purpose of ensuring the safety and protecting the health of all workers in the Site*. As a minimum the Safety Management System shall include the following items:

(a) a policy statement indicating that safety is a foremost priority;
(b) references to applicable laws and regulations;
(c) indoctrination and training policies and procedures;
(d) General HSE procedures (housekeeping, etc.);
(e) Industriel hygiène (respiratoire protection, noise, etc.);
(f) emergency procedures (includes training, and drill);
(g) incident investigation, reporting, record keeping;
(h) policy for substance abuse;

(i) Security provisions.

(2) Other components of the Safety Management System:

(a) Safety Policy including the allocation and delegation of responsibility for safety.

(b) The Contractor shall establish a Safety Policy which demonstrates his commitment and approach to safety. The Safety Policy shall clearly state the role and responsibility of every individual in the organization on safety. The Contractor shall ensure that the policy is communicated, implemented and maintained at all levels of the organization.

(c) Safe Work Practices: The Contractor shall establish and maintain detailed procedures to ensure that safe work practices are followed. These procedures shall incorporate instructions stated in the relevant standards, codes of practice and statutory regulations. In the absence of an Oman Standard or Code of Practice, the British Standards shall be consulted. The Contractor shall establish a list of all statutory requirements and establish a procedure to update this listing.

(3) Safety Training:

(a) The Contractor shall establish procedures to ensure that all personnel and in particular new personnel, or personnel transferred to new assignments are given proper safety training relevant to their duties.

(b) The Contractor shall establish a systematic safety training programmer for safety personnel, managers, supervisory personnel and workers as appropriate so that they have a comprehensive understanding of the rules, regulations, statutory requirements, procedures and instructions which are relevant to their duties.

(c) The Contractor shall be responsible for identifying any trade and skills training which may be required for the performance of the Works and ensure that such training is provided for the personnel concerned. Examples of trade and skills training required in the construction industry are: Lifting Supervisor, Crane Operator, Slinging and Rigging Operator, Forklift Operator and Scaffold Erector etc. The Contractor shall ensure that training information is given in

languages understood by the trainees. All training information, records and certificates shall be properly documented, kept and made available for verification.

(4) Workplace HSE Committee:

(a) The Contractor shall appoint a workplace HSE committee. The workplace HSE committee shall comprise representatives of employees of the workplace as well as employers.

(b) Meetings of the workplace HSE committee shall be held at regular intervals to:

(i) Review and discuss all site HSE matters of the employees;
(ii) Review safe work practices;
(iii) Co-ordinate jobs so that the work does not pose as a hazard to others;
(iv) Co-ordinate movement and storage of hazardous materials;
(v) Inform personnel of potentially dangerous works operation in the Site;
(vi) Review progress of works and work permit control;
(vii) Review training requirements;
(viii) Review work procedures and method statement; and
(ix) Review incidents and near misses.

(5) Incident Investigation and Analysis:

(a) The Contractor shall establish procedures to identify, record, investigate and analyses all accidents, dangerous occurrences and near misses that occurred on Site. The investigation and analysis shall identify the root cause and contributory causes of the incident and formulate measures accordingly to prevent future recurrence of similar incident and mast send copy to the client within 48 hours.

(b) The Contractor shall establish procedures to ensure that all personnel including the Sub-contractors' workers have the avenue to report safety incidents.

(c) Notwithstanding the reporting requirements of the Workplace and the Insurance Specification, the Contractor shall notify the OCDSEZAD in writing of any accident or dangerous occurrence associated with this Contract within 24 hours.

(d) The Contractor shall keep records of all incident reports, investigation, and analysis and counter measures taken.

(6) In-House Safety Rules and Regulations:

(a) The Contractor shall establish a set of in-house safety rules and regulations which give clear instructions to personnel on how to carry out critical activities in the Site. These rules and regulations shall be based on past experiences, industry codes and standards, and legislation. The rules shall promote the health and safety of the workmen.

(b) The Contractor's in-house rules and regulations shall include:

قوانين الموقع Site rules	
For Your Safety: all workmen/employees/visitors on TATWEER-managed Construction/Worksites (including Camp Areas) shall **من اجل سلامتكم يجب على جميع العمال/الموظفين/الزوار التقيد بما يلي في أماكن العمل والتشييد التابعة لشركة تطوير (بما في ذلك مخيمات العمال):**	
1- Report substandard conditions immediate to your supervisor.	1- يجب ابلاغ المسؤول المكلف بالإشراف على العمال فورا عن الأوضاع الغير آمنة والخطرة وعن الحالات الغير مستقرة.
2- Promptly report all injuries or feeling ill to your supervisor.	2 - يجب ابلاغ المسؤول المكلف بالإشراف على العمال فورا عن أي اصابة أوعند الشعور بالمرض .
3- Report all incident or near misses to your supervisor.	3- يجب ابلاغ المسؤول المكلف بالإشراف على العمال فورا عن أي حوادث وقعت أو قد تقع .
4- Safety hard hats and footwear must be worn in all operating and work areas.	4– يجب ارتداء كلا من الخوذةالواقية والحذاء الواقي والملابس الواقية في جميع مواقع العمل والتشغيل.
5- All personnel are responsible for maintaining good housekeeping.	5 - نظافة وترتيب مكان العمل هي مسؤولية جميع الأشخاص العاملين في الموقع .
6- Horseplay will not be tolerated as it may cause personal injuries and property damage .workplace behaviour must be civil and courteous	6- المزاح الثقيل والعدوانيةغير مسموح به يسبب إصابات واضرار بالممتلكات .
7- Working or driving while under influence of alcohol/ illegal drugs or any prescription drugs cause drowsiness or dizziness is prohibited.	7- يحظرالعمل أوالقيادة تحت تأثير مسكر أو مخدر أو أية عقاقير طبية تسبب النعاس أو الدوار.
8- No alcohol/liquor sale or consumption is permitted.	8- يمنع منعا باتابيع و تعاطي المشروبات الكحولية .
9- Sale /consumption of drugs banned in the camps area or site work.	9- يمنع منعا باتا بيع وتعاطي المخدرات بداخل مخيمات العمال أو في مواقع العمل.
10- No access to the construction site for private car is permitted.	10- لا يسمح للمركبات الخاصة بالدخول لموقع العمل.
11- No riders except the operator are allowed on mobile machineries such as cranes, forklift and trucks front-end loaders	11- لا يسمح بنقل الركاب على الآلات المتنقلة مثل الرافعات، والرافعات الشوكية والشاحناتوعربات التحميلالمشغل فقط.
12-During break time, do not sleep or seat under machineries such as underneath the cranes, Forklift and trucks.	12- لايسمح النوم أو الجلوس في وقت الراحة تحت الآلات مثل الرافعات والرافعات الشوكية والشاحنات.
13- Speed on the working site roads shall never Exceed 30kph.	13- السرعة القصوى المحددة داخل مواقع العمل 30 كم/ساعة.
14- Animal breeding will be prohibited inside camps area or site work.	14- يحظر ايواء و تربية الحيوانات داخل مخيم العمال و مواقع العمل.
15-No plastic bags are allowed onto construction worksites	15- يمنع منعا باتا استخدام الاكياس البلاستكية في مواقع العمل

(c) The Contractor shall ensure that these safety rules and regulations are properly documented and communicated to all relevant personnel on Site and visitors such as installed at work site in board 2.5x2.5m.

(7) Supply and use of personal protective equipment:

(a) The Contractor shall enforce the use of protective equipment and clothing on his sub-contractors and workmen.

(b) The Contractor shall provide safety helmets and safety shoes/boots of a type tested and approved by a testing body approved by the Chief Inspector of Factories, for all persons who are performing any work or services at the Site.

(8) Safety Promotion:

(a) The Contractor shall develop safety promotional programme to demonstrate the Contractor's commitment in advancing the culture of safety in the Site and reinforcing the concept that safety and production are inseparable. The programme shall enhance the personnel safety awareness and influence all personnel attitudes and behaviour on safety.

(b) Promotional material and activities shall include the following:

(i) Display of safety policy in the Contractor's marketing or publicity material, business plans or safety handbook issued to personnel;
(ii) Display of accident statistics;
(iii) Safety talks or screening of video on safety;
(iv) Display of signs, poster or other visual material, aimed at increasing safety awareness or to draw attention to particular safety issues;
(v) The issue of safety handbooks or brochures aimed at increasing safety awareness, as part of personnel safety training.

(9) Safety Inspections:

(a) The Contractor shall ensure that the Site is inspected regularly to see if there is anything prejudicial to the HSE of the persons employed therein.

(b) The Contractor shall establish procedures to carry out internal safety inspections. The inspections may be informal such as spot checks on activities, or formal, where documented procedures are followed.

(c) Personnel carrying out inspections shall be competent to do so and

shall be fully conversant with relevant procedures for safe work practices, site rules and regulations and statutory requirements.

(d) The results of inspections shall be brought to the attention of the Workplace HSE Officer and the site manager having responsibility in the area concerned. Any corrective action shall be immediately implemented by the site manager.

(e) The Contractor shall ensure that inspections are carried out at a specified frequency which will ensure a high level of compliance with the provisions of the Safety Management System.

(f) Inspections records and follow up action shall be properly documented.

(10) Maintenance Regimes for Construction Equipment:

(a) The Contractor shall implement a preventive maintenance programme to ensure that all construction equipment on Site is properly maintained and where appropriate, all safeguards and devices to protect workers shall be fitted and maintained in an efficient working order.

(b) The Contractor shall identify the statutory maintenance and testing requirements for all construction equipment on Site and integrate this requirement in the preventive maintenance programme.

(c) To fulfil the requirement of the foregoing, the Contractor shall ensure that:

(i) Inspections of all construction equipment, are held at predetermined and regular intervals;

(ii) Defects and material deficiencies identified are reported to the Contractor, the appropriate Sub-contractors and the OCDSEZAD;

(iii) Corrective action is taken in an effective and timely manner.

(d) The maintenance programme shall also include construction equipment of all subcontractors.

(e) If outside agents are engaged to carry out maintenance and repair, it

is necessary to control and supervise their activity to ensure that they conform to the agreed specifications and maintenance contract. All construction equipment so maintained shall be inspected and checked before being return for service.

(11) Hazard Analysis:

(a) The Contractor shall establish and maintain a programme for the identification and assessment of hazards. The programme shall include:

(i) recording of known hazards;
(ii) identification of new hazards;
(iii) analysis of the effects or the potential effects, resulting from these hazards;
(iv) Development and implementation of means to eliminate the hazard or to manage the hazard in a way that reduce the risk to an acceptable level.

(b) Hazard identification shall form part of safety inspection and shall be addressed by the workplace HSE committee.

(c) The Contractor shall ensure that persons responsible for the analysis of hazards and for determining the means of eliminating or reducing any safety risks, are:

(i) Technically competent
(ii) Given the necessary support so that they can effectively perform their duties
(iii) Control of movement and use of hazardous substances and chemicals
(iv) The Contractor shall maintain a register of hazardous substances and chemicals as in accordance with the Workplace.

(d) The Contractor shall establish a system to manage hazardous

substances and chemicals commencing at the initial purchase to the eventual depletion or removal from Site. The Contractor shall ensure that:

(i) The movement of hazardous material is known and recorded.
(ii) A technically competent person will receive the material and ensure its safe storage or distribution.
(iii) The material is correctly labelled.
(iv) The material is stored in designated areas for hazardous material and secured against unauthorized access.
(v) The material is returned to the designated storage areas when not in use.
(vi) The material is properly disposed or removed from Site when it is no longer required.

(12) Emergency Preparedness:

(a) The Contractor shall establish an emergency plan to respond effectively to emergency situations in the Site.
(b) The information developed shall be documented and communicated as appropriate within the Site to ensure that the Site organization can respond to emergency situations.

(13) Documentation:

The Contractor shall establish and maintain procedures to control all documents and data which are relevant to the safety management system. The Contractor shall ensure that:

(a) Valid documents are available to personnel who need reference to them.
(b) Changes to documents are made and approved by authorized personnel.
(c) Obsolete documents are promptly removed.

8.11.10 Safe Working in Confined Spaces

(1) The Contractor shall provide adequate ventilation and efficient apparatus

to keep all excavations, tunnels, sewers, water mains and other confined spaces free from all dangerous fumes and gases, whether generated in the soil strata or otherwise. The Contractor is required to appoint a confined space safety assessor to ensure that the confined space is in a safe condition before allowing his workmen to descend and work.

(2) While working in existing water mains/sewers/manholes/chambers/tunnels and other confined spaces, the Contractor shall provide air blowers to ventilate the place. Approved gas monitors/detectors which must be capable of detecting hydrogen sulphide, oxygen (H2S) deficiency, carbon monoxide and other flammable gases shall be used to ensure that the working area is free from all dangerous gases. It is the Contractor's responsibility to ensure that all his workmen are briefed on the hazards and safety procedures of working in confined spaces and also on the use of gas monitors/detectors as well as breathing apparatus. In addition, safety harness must be worn by all men working in confined spaces and adequate number of breathing apparatus must be provided within easy reach of the workmen working in the confined spaces. Monitoring of the air quality shall also be carried out regularly by the Contractor's supervisor while work is in progress and work shall be immediately suspended should unsafe condition develop. No smoking or naked flames shall be allowed in the sewer or manholes at all times.

(3) The Contractor is warned that besides performing any work in existing water mains/sewers/manholes/chambers/tunnels, connecting to or breaking into existing water mains/sewers/manholes/chambers/tunnels also poses potentially hazardous conditions. The existing water mains/sewers/manholes/chambers/tunnels to which connection is to be made should be thoroughly ventilated and certified safe by the WHSE Officer before workmen are allowed to execute the connection.

8.12. Work Safety Programme

The Contractor shall draw-up and submit to the OCDSEZAD a comprehensive safety programme for the Project. The safety programme should include the following:

(a) A detailed safe work procedure;

(b) A list of gas testing equipment (this should include testing equipment to verify the oxygen level, to ascertain the absence of toxic gases and to ensure that the air is below 10% of the Lower Explosive Limit (LEL);
(c) A list of ventilating equipment to provide adequate and effective ventilation at the workplace;
(d) A list of flame-proof appropriate rescue and first aid equipment to be deployed at the site in case of an emergency;
(e) A list of trained employees who are competent to carry out the gas-testing and rescue operations where applicable.

8.12.1 PROVISION of a Multi-Gas Meter

The Contractor shall provide a multi-gas meter, of approved type, for the use by the OCDSEZAD and his representatives. The multi-gas meter shall be able to determine and detect the presence of hydrogen sulphide gas (H2S), carbon monoxide and methane gas, as well as oxygen deficiency. The multi-gas meter shall be calibrated at least once in every six months.

8.12.2 General Safety Equipment for OCDSEZAD, His Representatives and Workmen on Site

The Contractor shall provide, maintain and remove when not required all safety helmets, safety harness, safety hand lamps, breathing apparatus, waterproof boots, waterproof coats and hats, protective apparel, safety ropes and all other necessary safety devices required for use by the OCDSEZAD, his representatives and all the workmen on site in compliance with the Contract Specifications.

8.12.3 Heat

According to the ministerial decree No. (286/2008(((Workers

Must not work in construction sites or open areas of high

Temperature at noon from 12:30up to 3:30 throughout June-July-

And August every Year.

8.12.4 Ventilation

(1) The Contractor shall maintain a fresh air supply by approved means to all confined spaces, chambers, tunnels, shafts and water mains where work is being undertaken. The use of compressed air for ventilation purposes will not be permitted. Compressed air driven fans will however be suitable for use.

(2) Approval to the use of diesel power ventilation will not normally be

Given.

(3) The Contractor shall ensure that no person is allowed to enter any manhole for any purpose whatsoever except with adequate attendance, life lines and breathing apparatus, or unless the manhole/chamber has been ventilated continuously for at least one hour up to the time of entry. Ventilation shall continue during all times that the manhole/chamber is occupied.

(4) Each manhole/chamber shall be provided with at least one approved automatic multi-gas detector.

8.12.5 Emergency Protection

(1) Whenever, in the opinion of the OCDSEZAD, the Contractor has not taken sufficient precautions for the safety of the public or the protection of the Works to be constructed/installed under the Contract or of adjacent structures or property or equipment, and whenever, in the opinion of the OCDSEZAD, an emergency has arisen and immediate action is considered necessary, then the OCDSEZAD, with or without notice to the Contractor, may provide suitable protection by causing work to be done and material to be furnished and placed.

(2) The cost of such work and material shall be borne by the Contractor, and, if the same is not paid on presentation of the bills, such costs may be

deducted from any amount due to or to become due to the Contractor.

(3) The performance of such emergency work shall not relieve the Contractor of responsibility for any damage which may occur.

8.12.6 Work in Hazardous Locations

(1) When carrying out work in hazardous locations, the Contractor shall use spark less tools and explosion-proof lighting. Electric power tools, open flame devices, electric welding and any device or methods which might conceivably cause ignition or explosion shall not be used unless specifically permitted by the OCDSEZAD As it is anticipated that the use of such spark producing equipment and methods may be necessary, specific approval of the OCDSEZAD for such use will be granted only under the following conditions and such special conditions the OCDSEZAD may find prudent to impose to cover unforeseen circumstances.

(2) Prior to the use of any such spark-producing equipment or methods, the OCDSEZAD shall be given reasonable advance notice, stating the location and nature of the work proposed, the type of spark-producing equipment or methods to be used and the hours during which this work will take place. The Contractor will then have to use a portable gas detection equipment to determine whether the atmosphere at the requested location of the proposed work is gas free.

(3) During the period, the Contractor shall constantly monitor the work area in order to determine the suitability of working in the area. The requirements pertaining to the gas detection shall be strictly complied with for all phases of work under this Contract in all hazardous locations.

(4) If the atmosphere proves unsafe, the Contractor shall provide, operate and later remove such temporary auxiliary ventilating facilities as are necessary to provide a safe atmosphere, at his own expense. The nature of such facilities shall be suitable for safe use for such applications and shall be approved by the OCDSEZAD the OCDSEZAD will authorize work in the requested location supplemented by such instructions and restrictions as he may deem prudent. Only work that complies with the authorization shall be performed during the agreed hours and with continuous atmospheric checks.

(5) The Contractor shall instruct and caution his employees that smoking is prohibited in hazardous locations and to observe and comply with all

warning signs. The Contractor shall submit an emergency response plan complete with the contact numbers of key personnel before work is allowed in a hazardous location.

8.12.7 Equipment in Hazardous Locations

(1) All equipment, including instruments and control devices, panels, cabinets, consoles, plus all related equipment, to be furnished and installed under this Contract or furnished under this Contract for installation by others, in hazardous locations, shall be of the appropriate enclosure rating or of explosion-proof construction unless otherwise specified.

(2) Hazardous locations are areas where dangerous concentrations of explosive gases or vapours exist, are produced, used or transported.

(3) Areas designated as hazardous include but are not necessarily limited to the following:

(a) Sewage treatment works and sewage pumping stations;
(b) Areas adjacent to fuel oil and chemical tanks, and live product pipelines; and
(c) Sewage manholes and chambers.

8.12.8 Requirements for Defined Hazard Areas

(1) **Overhead Hazards:** Every place where persons are required to work or to pass that is normally exposed to falling material or objects shall be provided with suitable overhead protection, and where no one is required to work or to pass but employees are at work in the vicinity such exposed area shall be roped off or otherwise guarded against inadvertent entry.

(2) **Falling Hazards:** Every hole into or through which a person may fall shall be guarded by an effective barrier to prevent falls except where free access is required by work actually in progress.

(3) **Drowning Hazards:** Where employees are exposed to the hazards of falling into the water in which one may drown there shall be provided at all times during the exposure, equipment for promptly rescuing persons from water and resuscitating rescued persons.

(4) **Slipping Hazards:** The Contractor shall not suffer or permit an employee to use a passageway, or a scaffold, platform or other elevated working surface, which is in a slippery condition. Oil, grease, water and other

substances causing slippery footing shall be removed, sanded or covered to provide safe footing.

(5) **Tripping and Cutting Hazards:** All passageways, platforms and other places of work shall be kept free from accumulations of dirt and debris and from other obstructions that could cause tripping. Sharp objects, which could cut any employee, shall be removed or covered.

(6) **Access to Workplace:** Stairways, ramps or runways shall be provided as a means of access to working levels above or below ground except where the nature or progress of the work prevents their installation in which case ladders or other safe means shall be provided.

(7) **Dust and Gases:** Dust and gases shall be controlled by ventilation or otherwise so as to prevent concentrations tending to injure health or obstruct vision or from exceeding safe levels.

(8) **Corrosive Substances:** All alkalis, acids and other corrosive substances shall be so stored and used so as not to endanger employees. Suitable protective equipment for the use of such substances shall be provided. Clean water supply shall be readily available for washing off any spillage of any corrosive substance on the employees.

(9) **Eye Protection:** Suitable eye protection equipment shall be provided for and shall be used by employees while engaged in welding or cutting operations or in chipping, cutting or grinding any material from which particles may fly, or while engaged in any other operation, which may endanger the eyes.

(10) **Respirators:** Where required the Contractor shall provide and the employee shall use a respirator suitable for the type of operation for which it is to be used. The Contractor shall maintain such respirator in good condition and shall furnish the means for its continued efficient working condition; and he shall provide regular inspection, cleansing and sterilization of such equipment. Such equipment when not in use shall be stored in a closed container.

(11) **Protective clothes:** Every employee required to pass or work within areas where there is danger of being struck by falling objects or materials shall be provided with a safety helmet of a type tested and approved by OCDSEZAD.

(12) Every employee required to work in water, wet concrete or other wet footing shall be provided with suitable waterproof boots.

(13) Every employee required to work in rain or similar wetting conditions shall be provided with a waterproof coat and hat.

(14) Every employee required to use or handle alkaline, acid or other corrosive substance shall be provided with appropriate protective apparel.

(15) Every employee required to work on or near a public road shall be provided with reflector safety vests.

(16) **Electrical Hazards:** Before work is begun the Contractor shall ascertain by inquiry or direct observation, or by instruments, where any part of an electric power circuit, exposed or concealed is so located that the performance of the work may bring any person, tool or machine into physical or electrical contact therewith. The Contractor shall post and maintain proper warning signs in the two official languages Eng&Arabic where such a circuit exists. He shall advise his employees of the location of such lines, the hazards involved and the protective measures to be taken and shall, if practicable, de-energize the electric power circuit.

The Contractor shall not suffer or permit an employee to work in such proximity to any part of an electric power circuit that he may contact the same in the course of his work unless the employee is protected against electric shock by de-energizing the circuit and earthing it or by guarding it by effective insulation or other means acceptable to the OCDSEZAD or other relevant authority. In work areas where exact location of underground electric power lines is unknown, employees using jackhammers, bars or other hand tools, which may contact a line, shall be provided with insulated protective gloves and insulated protective footwear.

(17) **Power Driven Saws:** All portable power-driven hand operated saws shall be equipped with guards above the base plate which will completely protect the operator from contact with the saw blade when in motion and with self-adjusting guards below the base plate which will completely cover the saw to the depth of the teeth when the saw is removed from the cut.

(18) **Public Vehicular Traffic:** Whenever any work is being performed over, on or in close proximity to a highway or any other place where public vehicular traffic may cause danger to men and to work, the working area shall be so barricaded as to direct traffic away from it or the traffic shall be specially controlled by persons designated for that purpose.

All vehicles used at the worksite must be roadworthy and registered with the appropriate authority. No person may drive a vehicle at the worksite unless he is the holder of the appropriate and valid driving license.

(19) **Stability of Structures**: No wall, chimney or other structure or part of a structure shall be left unguarded in such condition that it may fall, collapse or weaken due to wind pressure or vibration.

(20) **Storage of Materials and Equipment:** All materials shall be stored or stacked in a safe and orderly manner so as not to obstruct any passageway or place of work. Material piles shall be stored or stacked in such a manner as to ensure stability.

(21) **Stability and Safety of Structures:** The Contractor shall take measures to protect all existing structures e.g. retaining walls, bridge footings, culverts, etc. during the course of work. Where there is any question of stability of structures adjoining or over areas to be excavated or adjoining areas to be piled, such structures shall be supported where necessary by underpinning, sheet piling, shoring, bracing or other means in accordance with the design of a professional engineer, to prevent injury to any person.

(22) **Disposal of Debris:** Debris shall be handled and disposed of by a method which will not endanger persons. Debris shall not be allowed to accumulate so as to constitute a hazard.

8.12.9 Formwork for Concrete

(1) Formwork and false work shall be structurally safe and shall be properly braced or tied together so as to maintain position and shape.

(2) A Formwork Safety Supervisor shall be appointed to supervise the erection of the formwork including the false work, braces and other supports. Upon erection of the formwork, the designated person shall make a thorough inspection to ensure that the formwork is safe.

(3) The Contractor shall continuously inspect the formwork including the false work, braces and other supports during the placing of concrete. Any unsafe condition shall be remedied immediately.

(4) Horizontal and diagonal bracings shall be provided in both longitudinal and transverse directions, as may be necessary to provide structural stability. False work shall be properly seated top and bottom, and shall be secured in place. Where false work rest upon the ground, base plates shall be provided.

(5) Where the sum of the dead, live and impact loads on the formwork may exceed 730 kilograms per square metre, the design and drawing of the formwork and false work shall be as specified by a Professional Engineer. The specification and drawing shall be signed by the Professional Engineer. All formwork and false work shall be constructed in accordance with the specifications and the drawings.

(6) Stripping and Replacing False work: Stripping shall not commence until the concrete is fully set. Stripped forms shall be removed or stock-piled promptly after stripping in all areas in which persons are required to work or pass. Protruding nails, wire ties and other form of accessories not necessary to subsequent work shall be pulled, cut or otherwise made safe.

(7) False work shall be provided when necessary to safely support slabs and beams after stripping, or where such members are subjected to superimposed loads due to construction above.

8.12.10 General Requirements for Excavation Work

(1) No employee shall be permitted to enter any excavated area unless sheet piling, shoring or other safeguard that may be necessary for his protection are provided.

(2) Where any employee in an excavation is exposed to the hazard of falling or sliding material from any bank or side more than l.5 metres high above his footing, adequate piling and bracing shall be provided against the bank or side to eliminate such hazard. The excavation and its vicinity shall be checked by a designated person after every rain storm or other hazard-

increasing occurrence and the protection against slides and cave-ins increased if necessary.

(3) Temporary sheet piling installed to permit the construction of a retaining wall shall not be removed until the wall has developed its full strength.

(4) Shoring adequate to support the overhanging material shall be provided where banks are undercut.

(5) Excavated material and other superimposed loads shall be placed at least one metre back from the edge of open excavations and trenches and shall be so piled or retained that no part thereof can fall into the excavation, or cause the banks to slip or cause the upheaval of the excavation bed. Banks shall be stripped of loose rock or other materials, which may slide, roll or fall upon persons below.

(6) Open sides of excavations where a person may fall more than 3 metres shall be guarded by adequate barricades, and suitable warning signs shall be put up at conspicuous positions.

(7) No employee shall be suffered or permitted to work where he may be struck or endangered by an excavating machine or by material dislodged by it or falling from it.

8.12.11 Pipe Jacking

(1) No person shall enter a pipe jack of less than 1,200mm in diameter.

(2) All work within a pipe jack shall follow strictly the procedures for work within a confined space and a permit-to-enter procedure shall be followed.

(3) If the excavation is to be carried out by hand, the relevant parts of the Clause on Hand-driven Tunnels shall apply.

8.12.12 HAND-Driven Tunnels

(1) Excavation by hand of a full tunnel face shall be from the top downwards, taking the face out in steps or benches and securing the top and face as soon

as they are exposed. Wherever practicable, an open shield, extended in the crown with a hood, shall be used to provide initial support and protection unless otherwise acceptable to the OCDSEZAD Face boards held in place by hydraulic jacks may be necessary in soft ground conditions, if applicable.

(2) Rings of segments shall be installed as close as practicable behind the working area in a pre-determined sequence by a mechanical erector, or by hand for smaller diameter drives, and the shield jacked towards the completed segmental lining.

(3) Properly designed and installed working platforms shall be provided close to the face in tunnels over 2 metres in diameter and work sequence controlled so that workers in the invert are exposed to minimum falls of soil or rock.

(4) Hand-mucking shall be employed at the face, with mechanical means for muck removal following close behind, where the diameter of the drive permits this.

8.12.13 Shaft Sinking

(1) The Contractor shall insure that all loose material is swept down from the platform or opened edges before the workmen descend.

(2) After a suspension of work and after the firing of each blast in a shaft, the Contractor shall have the bottom of the shaft examined and tested for gas before the workmen descend and shall keep a record of all findings.

(3) Not more than two (2) persons shall be hoisted or lowered at the same time on a man-cage in any shaft. No person shall ride on a loaded material bucket at any time. A covered man-cage shall be used for hoisting and lowering men.

(4) Whenever persons are employed on platforms in shafts, the Contractor shall insure that all platforms are properly and safety constructed.

(5) No person shall be permitted to do any work in a shaft when muckers are working at the bottom of a shaft.

8.12.14 Piling, Shoring and Bracing

(1) Planks used as sheet piling shall be at least 50 mm thick. The maximum spacing between horizontal stringers or wales shall be such as to keep the planks within their safe bending stress. Shores and braces shall be of adequate dimension for stiffness and shall be so placed as to be effective for their intended purposes. Each end of each stringer piece shall be separately braced.

(2) Earth-supported shores or braces shall bear against a footing of sufficient area and stability to prevent their shifting.

8.12.15 Access

In every excavation more than l.2 metres deep there shall be provided ladders, stairways or ramps to furnish safe access to and egress from such excavation. Such ladders, stairways or ramps shall be in compliance with the provisions of the Regulations and shall be installed in sufficient number and in such locations as to be readily accessible.

8.12.16 Ladders and Step-Ladders

Every ladder and stepladder shall be of good construction, sound material and adequate strength for the purpose for which it is used. Ladders or stepladders shall not stand on loose bricks or other loose packing, but shall have a level and firm footing.

8.12.17 Trench Excavation

(1) Piling, shoring and bracing used in trench excavation shall be of adequate strength.

(2) Where trenching of more than l.5 metres in depth is done by a mechanical digger the protection required shall follow the jib as closely as possible.

(3) Where the trench is a deep trench and its depth requires two lengths of sheet piling, one above the other, the lower piling shall be set inside the bottom

stringer or wales of the upper piling and shall be driven down and braced as the excavation continues.

8.12.18 Positioning of Machinery

No person shall be permitted to position or operate machinery in a manner likely to endanger himself of others in the vicinity of excavations.

8.12.19 Cranes

(1) Cranes shall be so constructed, positioned and operated as to be stable. No crane shall be loaded beyond the safe working load except by an approved person or an inspector for the purpose of testing such machine.

(2) Every crane including all blocks, shackles, sheaves, wire rope and the various devices on the mast and jib shall be thoroughly inspected by an approved person at intervals not exceeding l2 months. Cranes shall be inspected before being first erected or operated on each job or after any major repair. Inspection and repair of crane jib shall be made only when the jib is lowered and adequately supported.

(3) Firm and uniform footing shall be provided for cranes. When such a footing is not otherwise supplied it shall be provided by substantial timber, or other structural members sufficient to distribute the load so as not to exceed safe bearing capacity of the underlying material.

(4) Every power-operated crane shall be provided with efficient brake or brakes or other locking devices, which will prevent the fall of the load when suspended and by which the load can be effectively controlled whilst being lowered. Hand or foot-operated brakes shall be provided with a substantial locking device to lock the brake in engagement.

(5) Attachment of Loads: Where a sling is employed to hoist long-length material, a lifting beam shall be used to space the sling legs for proper balance. When a load is suspended at two or more points with slings, the eyes of the lifting legs of the slings shall be shackled together and this shackle or the eyes of the shackle slings shall be placed on the hook. Alternatively the eyes of the lifting legs may be shackled directly to the hoisting block, ball or balance beam. The eyes may be placed on the lifting hook without shackles if the hook is of the safety type. Each container or receptacle used for raising or lowering stone, bricks, tiles, slates or other objects shall be so enclosed, constructed or designed as to prevent the accidental fall of such objects.

(6) Limitations on Modification of Cranes: No load-bearing part of any crane

shall be replaced by another part, and no such machine shall be modified by the addition thereto or removal therefrom of any load bearing part, unless the replacement or modification shall be certified by either the manufacturer or the approved person who tested the crane.

(7) Outriggers and counterweights shall be provided and used as specified by the manufacturer of the crane or by an approved person. Counterweights shall be properly placed and secured. Levelling jacks or other suitable means shall be provided and used with outriggers of truck-mounted mobile cranes.

(8) Jib Construction: The jib of every crane shall be of suitable steel. The crane shall be capable of lifting its jib by its own power when the outer end is at the level of the surface on which the crane rests, without placing undue strain on either the jib or the tackle. Jib stops shall be provided to prevent overtopping. Any jib extension not provided by the manufacturer of the machine shall be designed by a professional engineer and tested by an approved person. Where jib extensions are used, reductions in the capacity chart rating shall be posted.

(9) Every crane shall be provided with:

(a) An adequate braking mechanism for the jib hoist;
(b) A swing lock or swing brake capable of preventing rotation;
(c) A brake or other device adequate to bring the crane to a stop from any travel for which it is designed, together with a means of locking the crane so as to hold it stationary.

Cast iron shall not be used for members or parts subject to tension or

Torsion.

(10) **Capacity Chart**: A capacity chart shall be provided for every crane. Such chart shall be posted and maintained in a place clearly visible to the operator and shall set forth the safe loads for various lengths of jib at various jib angles and radial distances. Where outriggers are provided such loads shall be set forth with and without the use of outriggers. Unless furnished by the manufacturer or builder of the crane, a capacity chart shall be prepared and certified by an approved person. A crane shall not lift any load that exceeds the corresponding safe working load specified by its capacity chart.

(11) **Radius and Safe Working Load Indicator**: Every crane having a jib shall be provided with an accurate indicator which shows, clearly to the operator, the radius of the jib and the safe working load corresponding to that radius at all times and gives warning signal when the radius is unsafe.

(12) **General Operation of Cranes:** Before hoisting any load at a new job site, the jib shall be test-operated to its maximum height. Crane loads are to be raised vertically so as to avoid swinging during hoisting. No crane shall travel with a suspended load except upon a safe runway. During travel without loads, crane falls shall be secured or placed so as to prevent accident or damage by swinging. Crane cabs shall be locked when the operator is not present and no unauthorized person shall enter the cab or remain immediately adjacent to any crane in operation. If locking of a crane cab is impracticable, the operating mechanism shall be so locked as to prevent the crane from being operated by an unauthorized person.

(13) Operation Near Power Lines: No crane shall be operated in such a location that any part of the crane or of its load in any position of jib or swing may come within 3 metres of a live power line unless:

(a) The power line has been de-energized; or
(b) The crane has been effectively earthed.

8.12.20 Pile Drivers

(1) Before placing or advancing a pile driver, the ground shall be inspected by a designated person and where necessary for firm and level footing, timber shall be placed. After placing or advancing a pile driver, inspection and correction of the footing shall be made as may be necessary to maintain stability. All pile driving equipment shall be inspected daily by a designated person before the start of work and every defect shall be immediately corrected before pile driving commences. Every piling frame and its attachments shall be thoroughly examined by an approved person at least once in every period of twelve months. Where the pile driver is not in use the hammer shall be choked or blocked in the leads or lowered to the ground. A ladder extending from the bottom of the leads to the overhead sheaves shall be permanently attached to the structure supporting the leads.

(2) Pile Driver Operator: The operator of every pile driver shall be protected

from falling objects, steam, cinders and water by a substantial covering. Each member of the pile driving crew shall be properly instructed in the work he is to do and the operation shall be in the charge of a designated person who alone shall direct the work and give the operating signals.

(3) Handling of Piles: The preparation of the piles shall be done at a safe distance from the driving operation. During the hoisting of the piles, all persons not actually engaged in operating the equipment and handling the piles shall be kept away from the area. All concrete piles shall have attained the required strength before being hoisted or being subject to pulling stresses.

(4) Noise Hazards of Pneumatic Drilling and Piling: Contractor shall provide all workers with approved ear protectors and also shall ensure that they use them.

8.12.21 Use of Internal Combustion Engines

(1) No petrol-driven internal combustion engine shall be used underground.

(2) No diesel-driven engine shall be used underground unless it is so constructed that air that enters the engine shall first be cleaned and so that no fumes or sparks are emitted by the engine.

8.12.22 First Aid Station

(1) A first aid station of such standard as may be approved by the Commissioner for Workplace HSE shall be provided and maintained at all times. The station shall be fully equipped to treat illness and injuries which can be expected to normally occur in work of the types required by this Contract. Medical supplies shall be stocked in the types and quantities recommended by the designated doctor. The station shall be located near the main access to the Site, readily accessible to ambulance service.

(2) The station and the first aid box or cupboard shall be placed under the charge of Workplace HSE Officer who shall be trained in first aid treatment, and he shall always be readily available during the hours where work is carried out on Site.

8.12.23 Lighting

(1) Temporary lighting for maintaining safe working conditions shall be in accordance with the Workplace.

(2) The Contractor shall maintain the light and the electrical wiring, fittings etc. in a safe and fit condition at all times.

8.12.24 Electrical Licensing

(1) The Contractor shall ensure, when using electrical power on the Site, whether from the Power Grid mains or from his own generating equipment, that a license to use or operate an electrical installation is obtained for the Site.

(2) The Contractor shall also ensure that all temporary electrical installations in the Site are carried out by a Licensed Electrical Worker (LEW).

8.12.25 Hot Work and Prevention of Fire

(1) Gas cylinders shall be stored vertically in well-ventilated cages at ground level, with oxygen cylinders being kept separate from acetylene cylinders.

(2) The storage areas shall be in a position that shall not cause obstruction to access ways for vehicles/plant and should be at least 6 metres away from any source of ignition such as electrical distribution boards, generators, and hot works.

(3) Smoking must not be allowed in the vicinity of gas cylinders and conspicuous notices to this effect shall be displayed. Appropriate numbers and types of charged fire extinguishers should be on stand-by at the gas cylinder location, secured at waist height rather than standing on the ground.

(4) The minimum quantity of cylinders of compressed gas should be kept at work locations on Site, and the remainder removed to the designated storage area. They should be secured in a vertical position and individual sets should be chained to trolleys or to a fixed support.

(5) Empty cylinders should be identified as such e.g. by chalk marks on the cylinder, and should be treated for storage purposes as if they were full of gas. Any gas cylinders with obvious pitting or other corrosion, including corrosion to the valve stems shall not be accepted on Site.

(6) Gas cylinder shall be transported using proper equipment and safe lifting techniques are to be employed if a crane is to be used. They shall not be lifted by the valve stems.

(7) The Contractor shall provide, install and maintain approved flashback arrestors at the bottle and non-return check valves at the torch end of each hose. The hoses and pressure gauges should be regularly checked for damage and replaced as necessary. All hose and pressure gauge connections are to be kept tight.

(8) The Contractor is forbidden to use any type of gaseous hydrocarbons except acetylene in underground works. Liquid petroleum gas shall not be used below ground under any circumstances. If any cylinders of oxygen or acetylene are taken underground, they shall be transported back above ground at the end of each working shift and stored in the designated storage areas.

(9) So far as is practicable opaque screens shall be securely positioned around any electric arc welding being carried out on the Site to protect other workers and passing members of the public, either on foot or as drivers or passengers in vehicles, from the arc. Such screens shall be maintained in good condition.

(10) The Contractor shall establish a Fire Safety Plan to ensure that the work on site is undertaken to the highest standard of fire safety. As a basic guide the Contractor may refer to the latest edition of "Fire Prevention on Construction Sites" published by The Fire Protection Association of the UK. The plan shall be submitted to the OCDSEZAD for approval and must detail as a minimum:

(a) The fire warden team
(b) The role and responsibility of every individual in the worksite on fire safety;
(c) general site precautions, fire detection and warning alarm system;
(d) firefighting equipment including types of fire extinguishers;
(e) fire safety measures for site accommodation;
(f) fire escape and communication;
(g) fire brigade access, facilities and co-ordination;
(h) fire drills and training including the use of site firefighting apparatus;

(i) material storage including flammable liquid and gas, and waste control regime;
(j) fire safety measures for construction plant and equipment;
(k) Fire safety measures for electrical supply.

(11) The Contractor shall ensure that all procedures, precautionary measures and safety standards stipulated in the Fire Safety Plan are implemented, communicated and complied with by all workers including Sub-contractors and System-wide Contractors.

(12) The Contractor shall review and ensure the adequacy of the Fire Safety Plan as the Works progress.

(13) The Contractor shall carry out monthly checks of firefighting equipment and test all alarm and detection devices installed on Site.

(14) The Contractor shall conduct monthly inspections of escape routes, fire brigade access, firefighting facilities and work areas to ensure that the requirements stipulated in the Fire Safety Plan are complied with.

(15) All inspection records shall be documented and submitted to the OCDSEZAD

(16) Working near LIVE product pipelines

(a) A Hot-Work Permit must be obtained before commencing any work near existing product lines. The Method Statement and Risk Assessment must be reviewed before performing any hazardous work on the pipelines.
(b) The work shall be closely supervised by a Competent Supervisor who shall remain at the work area until the Work Permit is closed.
(c) Only after approval from all concerned parties including the Permit Issuing Authority shall the work commence.

8.12.26 Fire Safety Plan for Excavation and Tunnelling

(1) The Contractor shall incorporate the requirements in Workplace HSE (Construction) when formulating his Fire Safety Plan for the excavation and tunnelling works.

(2) The Contractor shall not use any petrol driven internal combustion engine in underground works.

(3) Firefighting facilities in compliance with Workplace shall be maintained in serviceable condition throughout this time.

8.12.27 Compressed Air Work

Work under compressed air methods shall comply with BS 6164.

8.12.28 Traffic Control and Road Safety

(1) The Contractor shall provide, install and maintain all necessary traffic and directional signs, barriers, blinkers, rotating beacons, cones, lane markings etc. in accordance with the requirements stipulated in the LTA's "Code of Practice for Temporary Traffic Control" to guide and inform the public of roadworks or any road/lane closure. The Contractor must observe the minimum clearance required between the working area and the trafficked carriageway and ensure that all plants and materials do not intrude into any area reserved for pedestrians, cyclists or other traffic.

(2) Truck mounted attenuator (TMA) shall be required for works on road with speed limit of 70km/h and above.

(3) The Contractor shall regularly maintain road surfaces at the Site to keep them free from potholes, unevenness, etc. Mill and patch method shall be required to repair any uneven surface defects.

8.12.29 Cable Detection Prior to Commence of Earthworks

(1) No earthworks shall be carried out in the vicinity of any underground electrical cables until the Contractor has arranged for a Cable Detection Worker licensed to carry out a survey of the proposed work area. The purpose of this is to confirm the location of all cables known to be in the vicinity and to identify any others that may not appear on the utilities drawings.

(2) The Contractor shall not assume that because none are shown to be in the vicinity of the proposed work area, there are no underground electrical cables present. There are severe financial penalties for inadvertently interrupting the electrical supplies, no matter how small the amount of damage caused.

(3) Similarly, the Contractor shall arrange for a survey to be carried out by a Telecommunication Cable Detection Worker licensed by the

Telecommunication Authority of Oman before commencing earthworks in the vicinity of any Oman Tel/ Ooredoo.

General Safety

(1) .If more than one contractors are operating on a site, they must communicate with each other and where necessary, co-ordinate their activities in order not to create unsafe working conditions for each other

8.13 Listening to Employees Complaints about Health and Safety

Policy:

(a) Line Managers will listen to any complaints about workers' health and safety and if they are unable to deal with the complaint, seek further assistance.

8.14 Workers' Transport Buses

Policy:

(a) Buses will be licenced, in reasonable condition and provided with a first aid kit and fire extinguisher;

(b) They will have a pulling loop in the front bumper and a red light will be fixed to the bus roof during night time operations;

(c) The bus driver will have a suitable and valid licence;

(d) There will be adequate windows in the bus that easily open and close;

(e) Buses will be air conditioned, have areas for storing the workers' belongings, and have an appropriate number of seats suiting the maximum working load and provision of seat belts;

(f) Standing is not permitted.

8.18 Monitoring and Review

Policy:

(a) Operational procedures and specific guidance developed in line with the strategic arrangements in this Policy will be monitored for effectiveness and revised where necessary. Accidents relating to a particular area will trigger a review of those arrangements;

(b) Negative safety event information, employee feedback and inspection findings will be monitored to ensure the currency and suitability of each of the arrangements in this Policy;

(c) The entire OCDSEZD Health and Safety Policy will be reviewed annually by the OSH department.

9. Appendices

Section 9.1 Appendix 1

Paragraphs (l) to (o)

LIFT TOOLS

a. All lifting operations will be subject to The Lifting Operations and Lifting Equipment Regulations 1998 (UK law);

b. All lifts must conform to the relevant European Product Directives and be 'CE' marked;

c. The operator of lift tools shall have a driving licence, unless operation is part of training and in this case it shall be carried out under supervision of a qualified person;

d. Each part of the lifting tools, including all support facilities, shall be fixed properly and made of a durable substance and free of visible shortcomings and shall be maintained according to the required technical procedures;

e. Lifting tools may not be used, unless after being tested and inspected by a specialist to check their safety. Lift ropes and joints shall be re-tested every 3 months, while lifters and lifting wheels shall be re-tested every 6 months and crane and weight lifter every 14 months. In all cases re-testing and inspection shall be carried out, following any considerable change or repair which affect the tool, or its stability. Results of the test and inspection shall be included in a report to be signed by the person who prepared it;

f. Signboards about the operation loads shall be placed at visible point on each lifter. The lifter may not be overloaded;

g. Any person shall not board the lifter, unless after ensuring that the power current is disconnected from the lifter operation tools. The current shall not be on unless it is ensured that there is no person on the lifter track;

h. It may not be allowed to carry any person on a lifter, unless he is provided by a compartment which prevents him from falling when the doors are closed or is in a

collision with a stationary or movable object. The compartment shall be provided with a door with a safety lock, or any other equipment which prevents the door from opening; unless it is in the vertical position to unload items. The compartment shall be provided with automatic equipment to ensure that it stops on top of the closer point to the compartment;

i. All pulleys around which the chain or wire rope rotates in any lifter shall have an appropriate diameter. The chain or rope used must have a suitable structure, or tightly fixed at the end. The remaining part of the rope or chain shall be enough for two complete cycles, as a minimum, in any operation position. It shall be ensured that the wire rope is free from corrosion;

j. Each lifter, weight lifter, or cogwheel shall be equipped with strong breaks, or any other means to prevent falling of the load if it stops and to control the load during unloading;

k. Each rope used for lifting or unloading shall be tightly fixed on the lifter hook, to prevent harming any part of the rope. Any hook used for lifting or unloading shall be equipped with an effective equipment to prevent the lifting, or loading rope from pushing away from the hook. Appropriate packing tools shall be used to prevent any friction of the load with the lifting rope;

l. The lifting, unloading or hanging of any load through a knotted chain or cable may not be allowed and it may not be allowed to use any short chain, or a chain connected with nails, or interlocked bolts in lifting and unloading, or hanging any load;

m. On using the lifting machine, its operation area shall be appropriately fenced to ensure that no worker collides with any moving part in it and to prevent the falling of any items from the stand to an area outside the lifter's work scope;

n. The lifter shall be provided with efficient automatic equipment to prevent its falling in case of any breakdown of the ropes and to ensure that the stand or compartment does not pass the remotest point set for its movement;

o. The lifter used in public roads shall be provided with the front and rear warning indicators and lights and appropriate fire-fighting tools;

p. A trained indicators worker, or indicator equipment shall be provided to guide the lifter's operation worker.

Section 9.2 Appendix2

Paragraphs (p) to (r)

FORKLIFT TRUCKS

a. Driving or handling any heavy tools shall be prevented, unless by the workers who were trained on such tasks;

b. Before using or driving forklifts, tests shall be carried out to ensure the following:

- The level of coolant of the machine.
- The level of engine oil.
- The machine metres and operation keys.
- The machine wheels.
- Brakes.
- Rear vision mirror.
- Lighting.
- Fire extinguisher.
- Safety belt.
- The machine fork.
- The machine hydraulic system.
- The machine battery.
- Electrical connections and their insulating substances.
- Fuel tank.

c. The machine shall not be used in case of any breakdown and the Foreman shall be informed immediately;

d. The machine driver shall not leave it operating and he shall return the moving parts to the ground position lift the hand break and pull the operation keys out before leaving it;

e. The protective safety wear shall be put on before using the machine;

f. The warning equipment and light flash shall be used when the machine comes close to intersections or invisible vision angles;

g. The machine shall be provided with warning equipment to be used in case of moving backwards;

h. Driving the machine backwards shall be slow, in case the loaded material prevents vision;

I. Sharp slopes and dangerous areas that may cause the machine to overturn shall be avoided;

j. Passengers shall not be allowed to enter the driving compartment while the machine is operating;

k. The driving compartment shall be closed in areas which may threaten the driver and shall be equipped with windows made of substance which allow clear vision such as durable glass;

l. The machine shall be equipped with air-conditioning, in case the driving compartment is a closed type;

m. The driving speed limit in the work site shall be observed;

n. Machines shall not be parked in front of fire taps or emergency doors;

o. Check the weight of material to be lifted to ensure that it does not exceed the lifter's capacity. This weight shall be registered in the lifter's data plate;

p. On lifting material through the lifting fork, the distance between the fork and the ground shall not exceed 20 cm and must not be less than 10 cm.;

q. Batteries of power operated forklifts shall be recharged in an area with good ventilation;

r. Any protrusion of body outside the compartment shall not be allowed during driving;

s. The doors` height and its suitability to the height of the forklift before passing through it shall be checked.

t. The machine shall be provided with a safe stair for embarking and disembarking;

u. The driver's seat shall be designed from vibration absorbent substances;

v. Suitable PPE must be worn when driving, including the wearing of a protective helmet at all times.

Section 9.3 Appendix 3

FACILITES FOR WORKERS

(i) Toilets:

a. A toilet room with a bathtub shall be provided for every 15 workers;

b. Separate toilets shall be provided for female workers with the same rate, completely separate from men's toilets and with a separate entrance;

c. Toilets must be clean, roofed, with an exhaust fan and sufficient lighting;

d. Toilets doors must not be directly opposite the workplace;

e. The floors of toilets must be tiled, their walls shall also be tiled at least one metre high;

f. Special toilets must be constructed in workplaces where there is no running water such as building projects and equipped with reasonable water tanks and ground tanks for waste;

g. Bathrooms must be provided at the minimum rate of one for 10 workers, in industries where the workers' bodies may be affected by substances harmful to health.

(ii)Workers' Sleeping Places:

a. The surface height of the building's floor should not be less than 20 cm. from the level of the exterior surrounding of the living place;

b. There must be enough inlets for ventilation and lighting. All windows must be covered with a network of thin wire;

c. An area of 4 metres must be allotted in sleeping rooms for the worker's bed, leaving at least 1 metre between one bed and the other. A cupboard shall be provided for each worker for his clothes and personal belongings. Beds shall not be put one over the other or in places other than sleeping rooms;

d. Bed sheets shall be kept clean;

e. The wooden buildings or tents designed for the workers to sleep in must be fire-resistant;

f. Provide adequate ACs;

g. Provide living places with drinkable water and at least one toilet for every 10 workers;

h. Provide tightly closed trash bins;

i. Take measures to fight the various kinds of insects and rodents and sterilize the rooms and furniture once a year. Keep a record of the results;

j. Workers' living places shall not be used as stores;

k. Provide all requirements for emergencies if workers' living place is far from public services facilities.

(iii) Places for Serving Food

a. Food serving, cooking and storage places must be well lit, ventilated and all windows covered with a network of thin wire;

b. Places where food is prepared and served and all the containers used must be clean. All materials used for preparing food and beverages must be kept in clean, tightly closed containers;

c. A separate place must be set apart for cooking;

d. Food serving places must be provided with hand-washing basins, soap and towels;

e. These places must be equipped with sufficient tables and chairs with smooth, easily cleanable surfaces;

f. Provide tightly closed waste bins and get rid of the waste regularly;

g. A separate place to be designated for female workers.

(IV) Clothes Changing Places

a. Place for changing clothes must be close to the washing place and far from the sources of harmful pollution;

b. These places will be provided with sufficient lighting and ventilation;

c. The places should be provided with special cupboards for keeping clothes with 2 parts for each worker to keep his work clothes in one and his normal clothes in the other;

d. These places shall be regularly cleaned and be free of insects and rodents;

e. A separate place for changing clothes should be set apart for female workers.

(v) Rest Rooms

a. Rest rooms should be close to workplaces;

b. They should be equipped with adequate furniture and ventilation;

c. They should be regularly cleaned.

Section 9.4 Appendix 4

Paragraphs (a) to (m)

SAFE WORK SITES

The employer or his representative shall take necessary actions to provide sufficient protection of the workers safety during their presence in work sites. The following shall particularly be observed:-

a. The work site, its buildings, materials and all the equipment used for work must conform to the technical specifications. This commitment shall apply to expansions or additions;

b. The size of the buildings must be adequate to the size of the operations executed in the establishment. The order of the buildings and work sites shall agree with the sequence of the stages of accomplishing operations in the sense that work materials coming from one work area should be directly used by the next work area without being transferred across a far distance;

c. Materials must not be transferred from one work area to the other by hand. Instead, movable storage shelves, carriers, revolving cylinders, conveyor belts or any other adequate method should be used. If the nature of the work requires otherwise, the platform from or to which the materials are transferred must be high enough not to require the worker to bend the upper part of his body;

d. Use hydraulic manual lifters, over-head lifters, and overhead lifting pulleys to lift, lower or move heavy weights;

e. Safety measures in the design of buildings walls and ceilings must be strong and fire- proof, and their interior must be painted with light colours;

f. The interior surface of the walls must be smooth, easy to clean and free of sharp protrusions and nails;

g. The space allotted for each individual worker must be at least 11.5 cubic metres without considering any height that exceeds 4.5 metres in work rooms and also the size of machinery and work tools. The space allotted for the worker who performs office work should not be less than 7 cubic metres;

h. Floors must be made of hard substances adequate to the nature of the work intended. They must be easy to clean and drain, moisture insulated, not absorbing liquids such as water and oils, flat and free of holes and obstructions that may cause stumbling or falling. They must not be slippery;

i. Drainage ditches and floor ditches must have rails not less than 1 metre high from the ground level with warning signs, the ditches must be covered with lids not more than 2.5 centimetres high. Their edges should drop with a slant angle not exceeding 30 degrees. The lids must be strong enough to stand the weight of the machinery and vehicles that may drive on them;

j. Provide sufficient space for machinery and equipment and leave passages between machinery to enable workers and equipment used for moving the materials used and also facilitate adjustment and fixing machinery;

k. Provide passages in the main roads of the establishment adequate to the number of workers, equipment and means of transport. Their floors must be flat and reasonably elevated if seen necessary, not slippery and with edges marked in bright colours;

l. Signs must be posted showing inlets and exits facilitating easy passage, free of boxes and containers or any objects that could obstruct people and equipment;

m. Consider good arrangement when storing materials by specifying the positions of the stored materials using clear signs on floors and putting them on steel shelves. The distances between the stored materials and the ceiling must be at least 1 metre and provide safe ladders to store or take materials;

n. Specify the positions of facilities, inlets, outlets and emergency exits;

o. High bridges, passages and platforms shall be prepared 1 or more metres above ground level with non-slippery floors surrounded by rails except inlets and the sides where loading is carried out and with fixed ladders;

p. Ladders must be made of fire-proof, non-slippery materials with hard, strong floors easy to clean and maintain. The metal network must be tight enough not to allow objects to fall;

q. Fixed staircases with 4 or more steps must be railed on both sides not less than 75 centimetres high. If the staircase is fixed to the wall, the railing will be on the

free side. The openings of the rails must not allow exit through it. The staircase must be at least 120 centimetres wide and sufficiently illuminated;

r. The staircases must have an elevation of 30 – 35 degrees;

s. Ladders must be properly set before using them. They will be surrounded by a round rail if perpendicular on the ground and more than 2 metres high;

t. There must be sufficient exit doors with adequate widths considering the number of workers;

u. Work areas shall not be used as temporary stores for materials, products, equipment or waste;

v. A suitable, adjustable chair with a back rest must be provided for the worker who has to sit to carry out his work. If the worker has to be standing up, a high chair must be provided if the nature of work allows that, otherwise, short rest periods must be allowed;

w. Workers must be protected from the hazards of objects, flying chips, sharp objects, caustic or hot liquids or any harmful materials;

x. Water pools close to work areas must be filled up with earth regularly;

y. A suitable, adequately furnished room, with AC and toilets (if toilets are far away) must be provided for the guard.

Section 9.5 Appendix 5

Paragraphs (n) to (r)

SAFE WORK SITES

The employer has to make sure that the conditions prevailing in the work place are sufficiently safe for the workers' health particularly in terms of:-

Lighting

a. Provide sufficient, adequate, natural or artificial lighting, distributed in the workplace equally, free from direct or reflective rays;

b. Window glass and light inlets must be clean from the interior and exterior permanently and must not be obstructed by any objects;

c. Lamps, stands and light devices must be periodically cleaned and maintained;

d. Provide a system of emergency lighting in cases of failure of normal lighting for whatever reason. The lighting system must clearly illuminate emergency exits for workers to exit to safety. Warning devices and extinguishers' positions must be clearly indicated;

e. Table 1 of the Ministerial Decree shall be applied to specify the levels of lighting adequate to the nature of the work. The level must be at a horizontal surface 1 metre from the ground with the exception of passages and paths that will be at a level of lighting not less than 10 LUX.

Ventilation

f. Avoid bad air by providing a natural or artificial ventilation system that provides fresh air in workplaces and use local ventilation where sources of pollution exist. This system must effectively suck the polluted air out;

g. The number of windows must be sufficient and wide enough to let in sufficient air. The stores must have openings for ventilation in ceilings and at the bottom above ground level;

h. The percentage of oxygen in workplaces should not be less than 21% of the amount in open air and not less than 19.5% in work below ground level;

i. Speed of air in workplace must not exceed 15 metres per minute in winter and 50 metres in summer. If it exceeds these, work should be stopped or moved to another place;

j. The degree of relative humidity in work places must not exceed 80 %, if it does, work should be stopped or moved to another place.

Heat and Cold

k. Technical methods should be used to control high temperature, such as insulating and absorbing substances or temperature reflecting devices and using local sucking ventilation or local cooling to control heat;

l. Operations of high temperature must be isolated in separate areas where only a minimum number of workers will be affected;

m. Workers will not work in construction sites or open areas of high temperature at noon, from 12:30 up to 15:30 throughout June, July and August every year;

n. Table 2 of the Ministerial Decree will be applied to specify the safe periods of exposure to low temperature.

Noise

o. Table 3 of the Ministerial Decree will be applied to specify the permissible daily exposure to levels of noise;

p. Technical methods should be used to prevent or minimize noise, such as:

q. Greasing and oiling the parts of machines that cause friction or noise;

r. Isolating the noisy operations that exceed the permissible levels far away from workers or using sound insulated rooms;

s. Installation of insulating, absorbing or reflective equipment on noisy machines;

t. Using floors that absorb sound vibrations;

u. Periodically maintaining silencers, machines and equipment;

v. Provision of adequate ear protectors and posting the proper instruction signs.

Drinking Water

w. Provision of sufficient drinkable water within easy reach for workers;

x. Provision of tightly closed water tanks made of strong non-corrosive materials connected to two pipes (excess and ventilation). Tanks must be cleaned periodically at least once a year;

y. Distribution of water in the establishment through a network of proper, non-corrosive pipes;

Z. Marking the pipes and tanks used for non-drinkable water with a distinct colour;

a. Provision of a reasonable number of water coolers adequate to the number of workers;

b. The drinking water containers must be tightly closed and their water daily changed and the containers washed and cleaned at least twice a week;

c. Bacterial analysis of the groundwater once every 6 months and chemical testing once a year in one of the government laboratories, to verify is portability. The result of analysis shall be recorded in a special register kept for this purpose.

Section 9.6 Appendix 6

SPECIAL PRECAUTIONARY MEASURES

Measures of Construction, Drilling, Demolition & Civil Engineering Works:

The employer shall take precautionary measures to protect the workers of construction, drilling, demolition and civil engineering works, particularly in the following:

a. The drilling begins from top to bottom. The sides shall have appropriate bends, according to the type of soil. The sides of holes whose depth exceeds 1.5 metres shall be supported by durable wood rafters and warning signs shall be put around the holes and dust shall not be allowed to accumulate near the holes;

b. The demolition works begin from the top storeys in the presence of a qualified supervisor. The debris must not be thrown form top and shall be removed either by cranes, or bent fenced passages. The whole site shall be fenced and precautionary measures shall be taken to ensure that no other persons than those involved in the demolition are there;

c. The debris shall be sprayed by water during the demolition process;

d. Take all practical measures by using cushions, poles and other fixing means to ensure that persons are not exposed to danger in case of collapse of any part of the building due to transitional weakness, or instability of the building, or constructions or any part of them before the construction work is completed;

e. In case the work is performed from a higher point, or from any part of a building, or any other constant building, jacks or stairs shall be provided and fixed at the work place and maintained. Such jacks or stairs must be adequate, suitable and safe to perform the required work;

f. The jacks must be fixed, changed, or unfixed by a specialist, who shall check them once a week in the minimum and write down the result of the checking on a special register;

g. On fixing the jacks, the poles and pillars must be vertical, or slightly leaning towards the building and must be closed to each other to ensure the reinforcement

and balance. The crossing wood pieces and horizontal rafters must be tightly interlinked with the poles;

h. The jack must be made of adequate, perfect and suitable for its purpose and they shall be supported by joints, if it is necessary. In case that one of its part is inadequate, or not meeting the requirements, access to it must be forbidden by putting a visible signboard, until it is repaired, or replaced;

i. Wheeled jacks must be placed on a constant and flat surface and shall be provided with an additional weight in the bottom, or strapped. The wheels must have a lock and they must not be moved unless from the bottom while someone is on top of it. The jack must not be overloaded;

j. The material of jacks, tools and waste must not be thrown from a high place and should be landed properly, unless an appropriate sledge is used;

k. The stairs leading to the jack or part of it must be fixed, in order not to allow its slip at the upper and lower parts and the stair sides must be supported properly;

l. Any stair which is repaired by digging nails, or whose broken parts tied by a wire ,or rope , or a one with more than broken ,or lost ,or wrongly placed step ,or painted in a way which makes it difficult to detect any cracks may not be used;

m. The stair must not be used if the landing, or work point exceeds 10 metres above the ground, unless the landing station is prepared within a distance of no more than 10 metres from the ground;

n. Unnecessary material and waste may not be put in a way which hinders the workers` movement on the work platforms, bridges and other areas where they pass. Such material must be arranged and stored and slippery if any must be removed from the platform or bridge floor;

o. All holes in uncovered roofs must be surrounded by side fences to prevent the fall of persons, or things from them. Durable shades must be made above passages to protect passers-by from the fall of construction material;

p. In case the process of manufacturing, cleaning, spray, exhale ,or processing results in dust, or vapour which may threat the workers lives, all required precautionary measures must be taken to protect the workers;

q. Internally combusted engines fixed in a closed area shall be banned, unless after taking required measures by extending pipes to transport the combustion gases and vapours from the engine to the outer space, or take any steps that avert the hazards of such gases;

r. The worker may not be asked to lift, transport, or move a heavy weight that may injure any part of his body;

s. Any board with nails shall not be left on areas which may harm anyone;

t. The workplace and paths leading to it and the areas where the loading and unloading operations are carried out and all dangerous holes must be provided with adequate and proper lighting;

Agricultural tools and machinery:

u. If the machine is provided with a driving room, it must allow clear vision to the front, and rear directions and it shall be provided with a comfortable seat;

v. Bulldozers and ploughs must be provided with a first aid kit and a healthy portable water dispenser;

w. The machines of grains and dry fodder must be equipped with a fire extinguisher and the exhaust pipe must be equipped with a flame preventer;

x. Electrical wires of the electrically operated machines must be completely and properly insulated;

y. Any person must not be allowed to sit beside the driver, unless an additional seat is provided.

Manual Field Works:

z. The workers must be provided with appropriate rest and bathing areas and they shall be protected against the sun heat;

a. Stairs must be used in fruit plucking, or trees cutting and cleaning in high areas.

Insecticides and Fertilizers Usage:

b. Insecticides packs must be carefully opened, particularly in areas with high temperatures;

c. Spray solutions must not be mixed by hand and it is preferred to use machines for this purpose;

d. While spraying in open areas, the splashes flow must be in the wind direction and it is banned to spray during heavy winds;

e. In closed areas such as plastic warehouses and houses, the direction of spray on walls must not exceed a 60 degree angle;

f. Warning signboards must be placed in areas which are chemically sprayed, or treated;

g. The first aid kit must be carried by the fighting team;

h. Prepare buildings, houses and warehouses before carrying out insect and pest fighting operations by filling cracks, pasting windows and ensuring that all potentials of required ventilation such as the opening of windows and doors from the outside is available. Protective masks shall be provided;

i. Evacuate buildings and places that need complete treatment and put warning signboards on them;

j. Store the fighting material in appropriate stores with good ventilation and lighting;

k. The remains of fighting material, washing of items and clothes used in such operations must not be thrown in the irrigation channels and pools;

l. The fighting packs must not be used for other purposes.

Animal Breeding:

m. The cattle and poultry yards shall be built of durable material and must be provided with good lighting and ventilation. The flooring of such buildings must be made of cement to ensure good drainage;

n. Not to fill yards with animals and to maintain regular cleaning of yards by washing the floors and clean walls, roofs and fed areas and drinking basins and dispose of waste properly;

o. Conduct regular check-up of animals and isolate the sick ones until required precautions are taken;

p. Speedy disposal of the dead animal bodies by burying, or burning them and in case of dealing with a dead animal due to communicable disease, the work uniform must be disposed of by burning them;

q. Avoid humidity during the storing of fodder by drying it in an open area under the sun for an adequate period. The storing areas muse be well ventilated and the fodder temperature must be monitored during the first six weeks and when signs of fermentation emerges;

r. Eating and drinking inside the yards or near them shall not be allowed under any circumstances. Drinking fresh non pasteurized milk from the animal directly shall not be allowed;

s. Fight mosquitoes and rodents in fields and animal breeding areas.

Section 9.7 Appendix 7

RADIATION, CARCINOGENS & ASBESTOS

Radiation:

The employer or his representative shall take required measures to provide adequate protection for the workers against the hazards of harmful rays during their presence in the workplace, particularly in the following:

a. Post appropriate warnings to highlight that there are risks of harmful rays;

b. Use the technical means which prevent, or curb access of harmful rays to the workplace such as protective fences and others;

c. Not to expose workers to harmful rays, unless necessity arises;

d. Locate the harmful ray polluted areas outside the areas where the ray source is used, by applying an appropriate settlement system of the rays source work centres within the establishment;

e. Not to employ any person under 16 years in works involving exposure to ionic rays;

f. The attached table No. (5) Identifying the limits of safe exposure to radioactivity shall be effective. The total doses of practical exposure doses of each worker shall not exceed 1 Sievert;

g. During exposure to ultraviolet rays and in cases of using rays with spectre scope ranging between 320 nanometre to 400 nanometre, the force of the ray falling into

the eye and unprotected skin shall not exceed 1mm watt for a period of more than 16 minutes and not to exceed 1 joule if the exposure period is less than 16 minutes.

Carcinogens:

The owner of the establishment shall take all appropriate measures to protect the workers exposed to the hazards of carcinogenic substances, or those resulting from manufacturing operations. The following shall be taken into account:

h. Seek non carcinogenic substances to substitute the carcinogenic substances;

i. Reduce the number of workers exposed to carcinogenic substances and assisting factors to the minimum, through the use of closed industrial operations;

j. Reduce the period and extent of exposure to carcinogenic substances and assisting factors to the minimum, to ensure the safety and health of workers exposed to such substances;

k. Use secured work methods and lay down required measures to monitor the work circumstances regularly;

l. Put warning signs in the workplace where the workers are exposed to carcinogenic substances;

m. Avail the equipment of carcinogenic substances` measurement, according to the type of activity practiced and conduct required regular measures and enlist them in a special register and compare them on regular basis to check that they remain within the safe limits set by the concerned authorities;

Asbestos:

The employer or his representative shall take required measures to protect the workers against the hazards of all types of the asbestos in the workplace. The following shall be taken into consideration:

n. Not to use the asbestos in building workers accommodation;

o. Replace the asbestos wherever it is possible, by using other substances or products, or alternate harmless technology;

p. Ban the use of the kerosodolet and products which contain this type of fibre;

q. Ban spray by all types of asbestos;

r. Take precautionary measures to prevent scattering of the asbestos dust in the air and control it and reduce exposure to it to the minimum;

s. Not to wear work uniforms polluted by the asbestos dust outside the workplace. Such clothes must be cleaned according to a hygienic and safe method to prevent the scattering of the asbestos dust. The employer or his representative shall be responsible for cleaning, maintaining and storing the work uniforms and the personal protection tools;

t. Avail washing areas for the workers exposed to asbestos near the work site;

u. Dispose of the asbestos waste by packing them properly and safely in durable packs which are free of air to unload them in special areas;

v. Take precautionary measures to measure the concentration degree of the asbestos dust in the air in the workplace on daily basis. A special register shall be prepared for this purpose and maintained as long as the establishment continues its work.

TABLE 5 (286/2008)

Workers exposed to radioactives		Safe exposure limits per mm Sievert in the year
Those who work directly on a source of radioactive	Exposure of total body	20
	Exposure of eye lenses	150
	Exposure of skin	500
	Exposure of limbs	500
Workers who practise occupational activities directly linked to areas and works connected with radioactives		3/10 of the limit set for workers who directly work on a source of radioactive
Worker neighbouring areas which use sources of radioactive	Exposure of total body	1
	Exposure of eye lenses	15
	Exposure of skin	50
	Exposure of limbs	50
Juvenile trainees whose training filed is directly linked to sources of radioactives	Exposure of total body	6
	Exposure of eye lenses	50
	Exposure of skin	150
	Exposure of limbs	15
Juvenile trainees whose training filed is not directly linked to sources of radioactives	1/10 of the annual exposure dose for juveniles who work directly on sources of radioactive	
Women who work directly on sources of radioactive		20
Pregnant women and breast feeders		2

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