

COMMENTS TO BE RETURNED TO:

COMPANY/PMC

FAX NO.:

FAX NO.:

BY DATE:

BY DATE:

Contractor Transmittal No.	T-DH-5578-E4-2541	Recd. Date	12 Jan 2011
Document No.	5578-E4-HSE-HU-00019	Rev. Date	11 Jan 2011
Document Title	Health Management Procedure	Rev	0

COMMENTS:

By:

Signed

Date

Review Code:

- | | | |
|----------------------|---|--------------------------|
| 1. REJECTED | : REVISE AND SUBMIT | <input type="checkbox"/> |
| 2. COMMENTS AS NOTED | : WORK MAY PROCEED SUBJECT TO COMPLIANCE WITH AND INCORPORATION OF COMMENTS | <input type="checkbox"/> |
| 3. NO COMMENTS | : WORK MAY PROCEED | <input type="checkbox"/> |
| 4. INFORMATION ONLY. | : ACCEPTED FOR INFORMATION ONLY | <input type="checkbox"/> |

No. of Pages attached to this form :

HEALTH MANAGEMENT PROCEDURE

AGREEMENT NO. : 09-5578-E-4

PROJECT NAME : Ruwais Refinery Expansion Project
EPC-4: Tankage & Associated
Interconnecting Piping

COMPANY : Abu Dhabi Oil Refining Company (TAKREER)

PMC : Mott MacDonald Ltd.

CONTRACTOR : Daewoo Engineering & Construction Co., Ltd.



We **Refine** Right

**RUWAIS REFINERY
EXPANSION PROJECT**

**EPC-4 TANKAGE AND ASSOCIATED
INTERCONNECTING PIPING**

AGREEMENT No. 09-5578-E-4

DAEWOO E&C

PROJECT No. 5578

Doc. No. 5578-E4-HSE-HU-00019

Rev. 0

Page 2 / 38

This page is a record of all revisions of this document. All previous issues are hereby superseded and are to be destroyed.

Proprietary Information: This document contains proprietary information and may not be partly or wholly reproduced without prior written permission from TAKREER and/or Daewoo Engineering & Construction Co., Ltd.							DOC. CLASS	T/1
							DIST. CODE	18/19
0	11 Jan 2011	Issued for Construction	A Mesquita	D Y Kim	V Bower	J H Lee		
B	01 Dec 2010	For Review and Approval	D Bhandari	A Mesquita	D Y Kim	J H Lee		
A	19 August 10	For Review and Approval	C Wardman	DY Kim	J Brand	M Heo		
REV	DATE	REASON FOR ISSUE	PREP	CHKD	REVD	APP'D	COMPANY	
SIGNED (Initials)								

NOTES:

- Revisions are denoted by a vertical line placed in the right-hand margin against the revised text.
- PREP = Prepared by, CHKD = Checked by, REVD = Reviewed by, APP'D = Approved by.
- In case of conflict between any requirements stipulated in this document with the contractual requirements, the contractual requirements shall prevail.

CONTENTS

1.	INTRODUCTION.....	5
1.1	Purpose.....	5
1.2	Scope.....	5
1.3	Objectives.....	5
2.	DEFINITIONS.....	5
3.	REFERENCES.....	6
4.	ROLES AND RESPONSIBILITIES.....	6
4.1	Project Manager.....	6
4.2	HSE Manager.....	6
4.3	Doctor / Nurse.....	6
5.	GENERAL REQUIREMENTS.....	6
5.1	Assignment of Personnel and Workers.....	6
5.2	Alcohol and Drugs.....	7
5.3	Health Training.....	7
5.4	Health Hazard Identification.....	9
5.5	Housekeeping and the Environment.....	9
5.6	Camp Facilities.....	11
5.7	Environment and Waste Management.....	12
5.8	Medical and First Aid.....	12
5.9	Emergency Response.....	13
5.10	Control and Inspections.....	14
5.11	Records and Reporting.....	14
6.	ATTACHMENTS.....	15
	Attachment 1: Health Organization.....	16
	Attachment 2: Medical Examination Standards of Fitness.....	17
	Attachment 3: Format for Recording First Aid Treatment.....	18
	Attachment 4: Health Hazard.....	19-25
	Attachment 5: Medical Emergency Communication Flow Chart.....	26
	Attachment 6: Health Activity Procedure.....	27-32
	Attachment 7: Health and Hygiene Check List.....	33-38

1. INTRODUCTION

1.1 Purpose

This procedure covers the Site Health Management for the Ruwais Refinery Expansion Project and specifies the minimum requirements for ensuring a healthful work environment throughout the duration of the project.

1.2 Scope

The Health Management Procedure is applicable to all personnel employed on the Ruwais Refinery Expansion Project.

1.3 Objectives

The health of all personnel on CONTRACTOR premises shall be protected from adverse health effects that may result from operations and products by

- Identifying and managing health risks
- Communicating health risks and prevention measures to all personnel
- Training the personnel in project specific health aspects
- Ensuring that the site staff are physically fit for the work
- Preventing the workers from being exposed to conditions adverse to their health
- Preparing and implementing a comprehensive sanitation and waste management procedure for the site

2. DEFINITIONS

Company	Abu Dhabi Oil Refining Company (TAKREER)
Contractor	Daewoo Engineering and Construction Company Ltd.
MSDS	Material Safety Data Sheet
PMC	Mott Macdonald

3. REFERENCES

- Environmental Control Procedure
- Camp Management Procedure
- Site HSE Plan
- Local Government Environment Law (U.A.E)
- Waste Management Procedure

4. ROLES AND RESPONSIBILITIES

4.1 Project Manager

Has the overall responsibility for ensuring the Site and the temporary facilities in a healthful work environment. He shall provide all necessary support including selection and recruiting of suitable staff, services and necessary materials required by the medical team at site.

4.2 HSE Manager

Shall be responsible for the preparation of the Health Procedure in coordination with the clients HSE Manager and local authorities, to establish the Health requirements of the company and sub-contractor personnel.

The HSE Manager is responsible for the implementation and management of the Health Procedure at the Site. He delegates his responsibilities to the Health & Environment Coordinators, who shall work in coordination with the medical personnel appointed to the Site. The Health & Environment Coordinator is responsible for monitoring the facilities, identifying non-conformances and recommending improvements.

4.3 Doctor / Nurse

The Site Doctors and Nurses are responsible for providing first aid, conducting medical examinations and inspections. They shall be responsible for speedy evacuation of sick / injured personnel to outside medical facility, when required.

The organization chart is shown in Attachment 1.

5. GENERAL REQUIREMENT

5.1 Assignment of Personnel and Workers

General

Employees engaged in physical labour should not exceed the age of 60 years. Office employees should not exceed 65 years.

All site personnel and workers shall be medically examined to ensure that they are in good health and fit for the work before they are mobilized at the site. CONTRACTOR shall appoint doctors, preferably with knowledge of the working environment. A medical examination register shall be kept in the Site Clinic.

Medical Examination

A Certificate of Fitness shall be issued to each worker. The medical examination shall be the responsibility of each subcontractor for his personnel and of CONTRACTOR. CONTRACTOR and Subcontractor HSE Groups and the Site Clinic shall file the Certificates of Fitness of their employees. The overall responsibility will be that of CONTRACTOR.

Workers fitness shall be assessed for the type of work to be assigned and certified by the Doctor after prolonged absence from work due to sickness or injury.

Minimum medical standards for fitness examination and frequency are specified in Attachment 2

Food Handlers and Cleaning Personnel

Everyone working in food handling areas and living quarters shall maintain a high degree of personal cleanliness and wear suitable, clean and protective clothing.

No one who is a carrier of a disease transmittable through food, or whilst afflicted with infections, sores and the like, shall work in food handling areas or living quarters.

All food handler personnel shall be supervised, instructed and trained in food hygiene.

In addition to pre-employment medical examination, food handlers and cleaning personnel shall be medically examined and certified every six months (Attachment 2).

5.2 Alcohol and Drugs

Alcohol will not be allowed at the site or offices. Illegal drugs will not be tolerated in any of the project locations.

Employees and workers are required to be free from illegal drugs and have the responsibility not to be impaired by alcohol while working. Personnel shall inform their supervisor prior to using prescribed drugs on the job.

Any manager or supervisor has the authority and the responsibility to take appropriate action if they believe a person on the project premises is impaired by alcohol or drugs.

CONTRACTOR alcohol and drug policy shall be explained to all personnel at the time of employment and at the Site HSE Induction Training.

5.3 Health Training

First Aid Training

Personnel selected from the workforce, one for every 50 people and mainly supervisors and foremen, shall be trained in First Aid in order to support the medical personnel in case of multiple injuries or

simultaneous accidents in different places of work. During shift working it shall be ensured that appropriate no of first aiders and doctors are always present.

These personnel shall receive basic training in first aid at the work site, in particular for electrocution, burns, heat stroke, bleeding and CPR. Certified medical personnel shall conduct the training.

Further, the personnel shall receive basic information related to first aid assistance, survival procedures, "do's" and "don'ts" in case of accidents, and information related to the main health hazards of the area. Refresher first aid courses shall be carried out at regular intervals at the work site (every 2 years) depending on the third party certification.

Hazardous Substances Training (Hazard Communication Program – HAZCOM)

As part of the HSE training, workers shall be informed of the hazards they are likely to encounter when working with hazardous substances. The training shall cover the following:

- Use of appropriate PPE
- Hazardous materials that will be used at the Site
- Material Safety Data Sheet (MSDS) and their content
- Exposure to, and handling of, hazardous substances
- Storing and container labeling
- Hazardous waste collection and disposal
- Provision of “Safety shower and eye wash” near areas handling hazardous materials.

As part of the Job Safety Analysis, after the identification of hazardous substances that may be used, the workers shall be trained, using the relevant MSDS, in the use and handling of these hazardous substances, including the use of proper tools and PPE for handling the materials and first aid techniques in case of exposure or ingestion.

Heat Stress / Cold Stress

Heat stress / Cold stress awareness training shall be provided as part of the HSE induction training as well as separate more comprehensive site based training packages. The heat index will be monitored from March through to October, although the hottest months are during summer which is from June to September. Due to this, the U.A.E Ministry of Labour have released official communication stating that the general working midday break will take place from 12h30 to 15h00 for all workers with the exception of certain outdoor Utilities services for technical reason. This will be effective from 15 June through to 15 September. (Severe Weather Management Procedure Doc. No. 5578-E4-HSE-HU-00012)

Tropical Disease Mitigation

The medical personnel shall conduct education courses on the prevention, prophylaxis, and diagnosis and treatment.

First Aid Procedure Training

As part of the HSE training, the workers shall be informed and become familiar with the procedure for reporting and requesting the intervention of first aiders and medical personnel.

Training Records

Records of the training, specifying names of the trainees, the name of course, the date, and the name of the instructor, shall be kept and filed by the HSE Manager.

Employees who receive the training shall be given training passports identifying their level and classification of the training. These training passports will be covered by a plastic sleeve and kept by the employees.

5.4 Health Hazards Identification

Major health hazards identified and prevention and mitigation measures are listed in Attachment 4

Assessment and evaluation process shall ensure compliance with all aspects of the occupational health and that lessons learnt are incorporated in the specific plans, procedures and method statements. "LESSON LEARNT" register shall be maintained.

5.5 Housekeeping and the Environment

General

The site and work areas and the Temporary Facilities shall be maintained to a high standard of housekeeping at all times in order to;

- Secure clear access
- Eliminate potential sources of fire
- Maintain a safe and healthful work environment
- Smoking shall be allowed only in designated areas to prevent "Passive Smoking" by non-smokers.

All supervisors, including the Subcontractors, shall conduct daily inspections. In addition, periodic inspections by the Safety Committee shall be conducted and reports maintained.

Potable Water and Sanitation

CONTRACTOR shall provide an adequate supply of potable water and sanitary facilities for the workforce at various locations on the Site. Locations will vary, depending on the progress of the work. Drinking water shall be provided in sealed containers. Disposable or individual cups shall be used. Common cups shall not be permitted.

If potable water is not supplied in sealed containers, but in bulk, a weekly test shall be performed to ensure the quality of the water. Water at the camp will be supplied from existing water tank piped to desalination plant. Tests to verify the quality of the water will be carried out monthly.

Toilets shall be located at designated areas only. All toilet facilities shall be cleaned and disposal services for the toilets provided on a continuous basis. One toilet shall be provided for each 30 workers and located within a reasonable distance to each work area. Hand soap or other cleaning agents and individual paper hand towels shall be provided.

Air

Exhaust fans shall be used when working indoor or enclosed space.

Noise

As far as practical, low noise/silenced construction equipment shall be used. Where noise at work areas exceeds 85 db, barriers and warning signs specifying the use (mandatory) of ear protectors shall be installed. Necessary hearing protectors shall be provided to personnel expected to work in noisy area.

Vibration

Many workers do not think that their exposure to vibration could be a health hazard. Vibration exposure is more than just a nuisance. Constant exposure to vibration has been known to cause serious health problems such as back pain, carpal tunnel syndrome, and vascular disorders. Vibration related injury is especially prevalent in occupations that require outdoor work, such as forestry, farming, transportation, shipping, and construction. There are two classifications for vibration exposure: whole-body vibration and hand and arm vibration. These two types of vibration have different sources, affect different areas of the body, and produce different symptoms.

Whole-body vibration is vibration transmitted to the entire body via the seat or the feet, or both, often through driving or riding in motor vehicles (including fork trucks and off-road vehicles) or through standing on vibrating floors (e.g., near power presses in a stamping plant or near shakeout equipment in a foundry).

Hand and arm vibration, on the other hand, is limited to the hands and arms and usually results from the use of power hand tools (e.g., screwdrivers, nut runners, grinders, jackhammers, and chippers) and from vehicle controls.

Vibration caused from equipments that are not placed correctly or tied down may also cause vibration, this type of vibration may cause mental stress like e.g. being tortured day in and day out causing employee to become irrational and agitated during the day leading to conflict in the work place. This is sometimes caused by air conditioners, fridges, large kettles boiling water or even large generators outside of the offices emitting a drone, (deep humming sound).

Hazardous Materials and Substances

Hazardous materials shall be stored on impermeable pads with full containment.

Paints, solvents and other hazardous materials shall be stored in shaded, dry, well-ventilated areas located away from offices, workshops and hot work areas. Storage shall be done in accordance with the MSDS and the vendor recommendations.

Up-to-date MSDS shall be available at Site for all hazardous chemicals and substances brought to the Site. The MSDS shall be provided by the suppliers of such hazardous chemicals and substances and filed by the Field HSE Manager and the Doctor at the Clinic. A binder containing all the MSDS's related to chemicals on site will be kept in both the HSE Department and Materials warehouse where the chemicals are stored.

Radio Active

Radioactive materials that decay spontaneously produce ionizing radiation, which has sufficient energy to strip away electrons from atoms (creating two charged ions) or to break some chemical bonds. Any living tissue in the human body can be damaged by ionizing radiation in a unique manner. The body attempts to repair the damage, but sometimes the damage is of a nature that cannot be repaired or it is too severe or widespread to be repaired. Also mistakes made in the natural repair process can lead to cancerous cells. The most common forms of ionizing radiation are alpha and beta particles, or gamma and X-rays.

In general, the amount and duration of radiation exposure affects the severity or type of health effect. There are two broad categories of health effects: **stochastic** and **non-stochastic**.

Stochastic effects are associated with long-term, low-level (chronic) exposure to radiation. ("Stochastic" refers to the likelihood that something will happen.) Increased levels of exposure make these health effects more likely to occur, but do not influence the type or severity of the effect.

Non-stochastic effects appear in cases of exposure to high levels of radiation, and become more severe as the exposure increases. Short-term, high-level exposure is referred to as 'acute' exposure.

Many non-cancerous health effects of radiation are non-stochastic. Unlike cancer, health effects from 'acute' exposure to radiation usually appear quickly. Acute health effects include burns and radiation sickness. Radiation sickness is also called 'radiation poisoning.' It can cause premature aging or even death. If the dose is fatal, death usually occurs within two months. The symptoms of radiation sickness include: nausea, weakness, hair loss, skin burns or diminished organ function.

Storage and Control of Radioactive Isotopes

- The DEC is responsible for providing, controlling and maintaining a secure radioactive storage.
- The isotope storage area shall be located in a non-working area on the site and away from any vehicular or pedestrian traffic, but close enough to the road to avoid transportation over long distances.
- The storage shall be walled and roofed for, protection against rain and mist.
- The storage areas shall be enclosed with a 2 meter high chain link fence and each of the four communal fenced sides shall display the radioactive warning pictogram.
- The HSE group shall control the keys of the storage area fence, the storage itself and storage pits.
- It shall be so located that the resultant radiation exposure rate in any occupied area is as low as practical, particular care being taken that no person may be exposed to doses of radiation in excess of the dose limitations given by relevant statutory requirements.

Portable Fire extinguisher of dry chemical powder 9kg ABC type should be installed on premises of hazardous substances. (Doc. No.5578-E4-HSE-HU-00037 Fire Prevention Protection Procedure)

A Fire Fighting crew will be organized by DEC and will be trained at frequent and regular basis. All Project personnel will be briefed on fire extinguishers and other equipment use and reporting procedures during the new employee orientation and at frequent tool box safety meetings. Hands on training are invaluable for those expected to use fire extinguishers. Emergency procedures and telephone numbers will be posted at key locations.

5.6 Camp Facilities

General

The camp shall be located in a well drained location and the facilities shall be well lit, ventilated and easy to be clean.

Kitchen

Kitchen and messing areas shall be completely separated from the accommodation areas.

The floors shall be graded to flow into suitably located floor traps for ease of washing. Rodent proof food stores shall be provided. Only bottled gas and electrical stoves are acceptable. If bottle gas is used, location of the bottles shall be agreed with Client and in conformance with the Compressed Gas & Air Procedure. Kitchen areas shall be cleaned daily, immediately after meals have been served.

Living Quarters

Living quarters shall be air-conditioned. No food storing or preparation shall be allowed in the living quarters. Living quarters shall be cleaned daily. The areas around the building shall be cleaned, including removal of grass, at least once a week.

Pest Control

The camp area shall be fogged every week or as required by the Client and depending on the project location for control of flies and other insects. Do not use any form of residual pesticide, only use aerosol/flushing agents which are properly labelled or follow the instructions of manufacturers. It is the responsibility of all the personnel to report to the Pest Control Unit in case of any pest infestation.

Refuse and Garbage Disposal

The camp area is to be kept free from litter and waste at all times. Adequate garbage receptacles shall be provided and emptied daily.

5.7 Environment and Waste Management

Waste identification, classification, handling and disposal shall be covered by a specific plan (Waste Management Procedure) prepared based on the criteria specified in Client Waste Management Program and CONTRACTOR Environmental Management System developed based on ISO14001, one month before site mobilization (including approval of same)

Waste management and the protection of the environment shall be explained to all personnel during HSE Induction Training.

5.8 Medical and First Aid

Medical Assistance

Qualified medical personnel shall be appointed by CONTRACTOR at the Site in order to give first aid and emergency medical care to injured workers. In addition, personnel assigned from among the workforce, mainly supervisors and foreman, shall be trained in first aid and holding First Aid Certificates at the ratio of one to every 50 personnel.

A first aid medical care facility with adequate medical equipment shall be installed at the site as part of CONTRACTOR temporary facilities. The first aid rooms shall include facilities for a man to lie down for treatment and be furnished with a large industrial size first-aid box the content of which shall be agreed with Client one month before the site mobilization. A fully equipped ambulance with a driver will be on stand-by at the Clinic during working hours.

A log of all first aid treatments shall be maintained. The log shall record the name of the treated person, date, time, nature of injury and treatment (Attachment 3). All injuries, regardless of their seriousness, shall be immediately reported to CONTRACTOR HSE Department.

For serious injuries, arrangements for emergency hospitalization will be made before the beginning of the site activities.

First Aid Kits

First Aid Kits shall be located at the site so as to allow easy and quick access. The area supervisor shall be responsible for ensuring that the kit is maintained in serviceable conditions.

The Doctor/Nurse shall specify the basic content of each kit which shall also be agreed with CLIENT. All items that are required to be sterile shall be individually wrapped and sealed.

First-aid Procedure

- General

Only Trained First Aiders shall be conversant with the procedure and should be applied when they, or a co-worker working in their area, sustained injury.

- Minor Injuries

The injured person shall verbally report to his immediate supervisor the accident causing the injury and seek immediate treatment either by the medical staff or first-aid in charge of a first-aid box within a working area.

The nurse shall then enter the details of the accident on behalf of the injured person in the form for recording first-aid treatments (Attachment 3).

The immediate supervisor shall also be kept fully informed of the situation. The supervisor, after notifying the HSE Section of the accident, shall investigate, together with the safety representative, and prepare the accident report, thus ensuring that prompt remedial action is taken to prevent a recurrence.

- Serious Injuries

Supervisor, foreman or other persons at the location shall make sure the injured are getting first aid and shall immediately call the ambulance. Unless the injured person is in danger of further injury, such as caving in ditch or falling objects, he shall not be moved until the arrival of the doctor or nurse.

Supervisor, foreman or other persons shall immediately notify the HSE Manager and the Construction Manager.

5.9 Emergency Response

CONTRACTOR, before the beginning of the Site activities, will develop an emergency response procedure and identify

- Responsibilities within CONTRACTOR organization
- Coordination with Client plant operators and HSE personnel
- General, medical, fire, and specific major incident response requirements
- Communication systems within site and external emergency services

- Wind speed and direction indication
- Layout plan showing hazard areas and available equipment
- Alarms
- Identification and marking of escape routes.
- Evacuation and muster areas

The Project Manager shall ensure, in coordination with Client, that dedicated teams are organized and trained for response to an emergency arising at the site or the camp. CONTRACTOR will also have in place an agreement with S.O.S. or local Clinic in City for the medical evacuation of personnel.

The basic criteria based on which an emergency communication procedure shall be developed are shown in Attachment 5.

5.10 Control and Inspections

The HSE Manager together with the medical personnel will be responsible for the control and inspections of the hygiene of the temporary facilities.

The supervisors will be responsible for the daily inspections of their working areas to ensure that they are clean and garbage and waste are removed.

In addition to HSE audits and HSE Committee inspections, the following inspections and controls shall be carried out.

- At weekly intervals the medical staff shall inspect the camp facilities and offices, in particular showers and toilets, kitchen and canteen
- HSE Manager shall designate competent persons to quarterly inspect vehicles for personnel transportation cleanliness and certify.
- Water samples will be analyzed as specified in Section 5.5
- Audiometric testing of working areas are carried out by the Environmental Coordinator monthly at locations in and around areas identified as areas where the noise equals or exceeds 85 dB(A)

5.11 Records and Reporting

CONTRACTOR shall file the following records:

- MSDS (HSE Section and Clinic) for all hazardous materials handled at site.
- Employment physical examination (HSE Section)
- Training records (HSE Section)
- Individual employee record of injury or illness (At the Clinic)

- Examination results of food handlers and cleaning personnel (At the Clinic)
- Inspection and audit reports (HSE Section)
- Pest control measures (HSE Section)

The HSE Manager shall issue a monthly report covering the following items. A summary of the report shall be included in the Monthly Progress Report as part of the HSE Section.

- Number and types of cases treated. This shall include all personnel at site, Contractor, sub contractor, temporary visitors, Company etc.
- Trend analysis of injuries
- Result of inspection and audits, both CONTRACTOR internal and by Client or Public Authorities

Occupational Illness Performance Indicators like-

- Lost Time Illness Frequency
- Total REPORTABLE Illness Frequency
- Total REPORTABLE Illness Severity
- Total Sickness Absence

Shall be determined and presented in monthly meetings.

6. ATTACHMENTS

ATTACHMENT 1: Health Organization

ATTACHMENT 2: Medical Examination Standards of Fitness


ATTACHMENT 3: Format for Recording First Aid Treatment

ATTACHMENT 4: Health Hazard

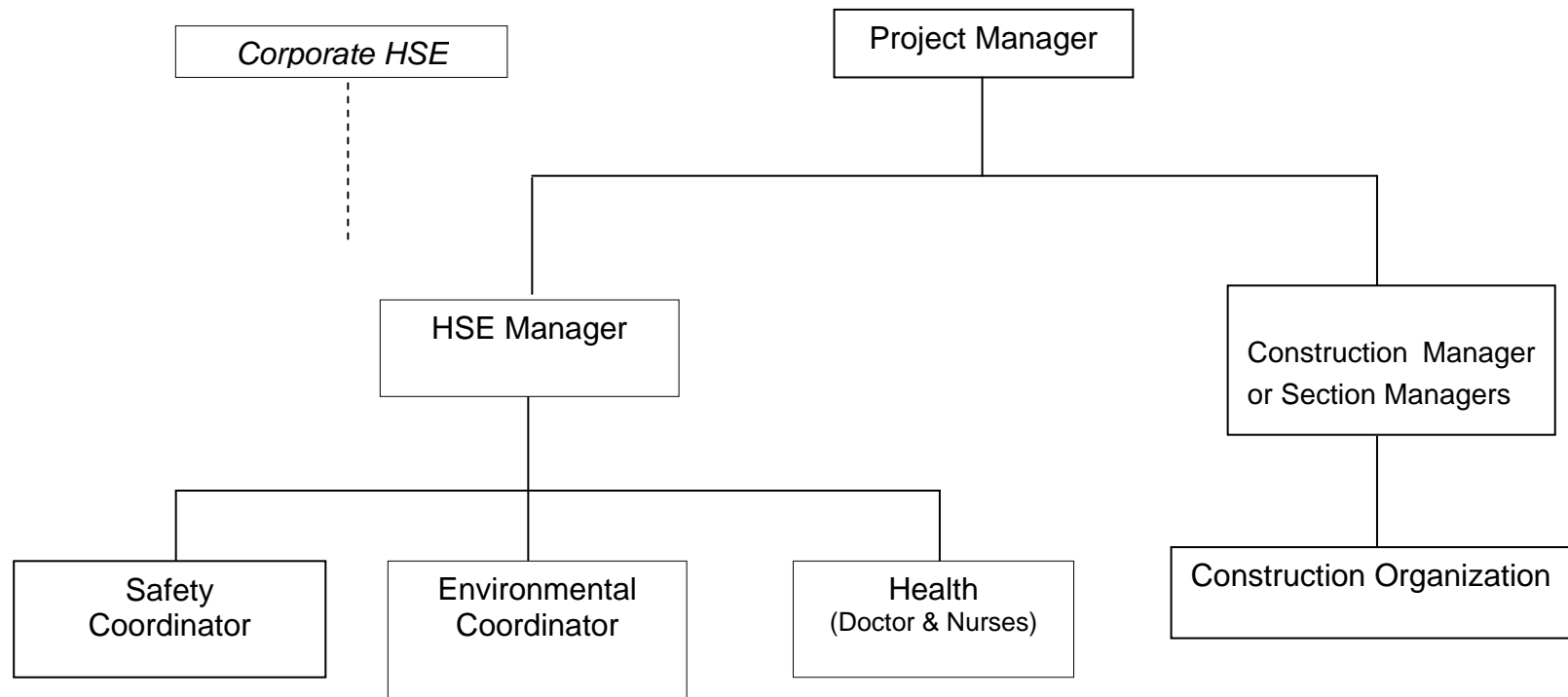
ATTACHMENT 5: Medical Emergency Communication Flow Chart


ATTACHMENT 6: Health Activity Procedure

ATTACHMENT 7: Health and Hygiene Check List

 <p>تكرير TAKREER شركة أبوظبي لتكرير النفط We Refine Right</p>	<p align="center">RUWAIIS REFINERY EXPANSION PROJECT</p> <p align="center">EPC-4 TANKAGE AND ASSOCIATED INTERCONNECTING PIPING</p> <p align="center">AGREEMENT No. 09-5578-E-4</p>	<p align="center">DAEWOO E&C</p>	
<p>PROJECT No. 5578</p>	<p>Doc. No. 5578-E4-HSE-HU-00019</p>	<p>Rev. 0</p>	<p>Page 16 / 38</p>

ATTACHMENT 1: Health Organization




 <p>TAKREER شركة أبوظبي لتكرير النفط We Refine Right</p>	RUWAIS REFINERY EXPANSION PROJECT		DAEWOO E&C
	EPC-4 TANKAGE AND ASSOCIATED INTERCONNECTING PIPING		
AGREEMENT No. 09-5578-E-4			
PROJECT No. 5578	Doc. No. 5578-E4-HSE-HU-00019	Rev. 0	Page 17 / 38

ATTACHMENT 2: Medical Examination Standards of Fitness

Medical Examination	Pre-employment Examination (1)	Food Handlers & Cleaning Personnel (2)	< 40 Years Age Every 3 Years (3)	> 40 Years Age Every 2 Years (3)
Questionnaire	Yes	Yes	Yes	Yes
Thorax X-ray examination	Yes	-	Yes	Yes
EKG(ECG)	Yes	-	Job/task dependent	Yes
Blood test (HIV, Hepa, etc.)	Yes	Yes	Yes	Yes
Stool / Urine	Yes	Yes	Yes	Yes
Audiogram/Vision	Yes	-	Yes	Yes
Physical examination	Yes	Yes	Yes	Yes


Note:

- (1) All personnel
- (2) Frequency of medical examination for food handlers and cleaning personnel is six months
- (3) Heavy duty equipment operators, crane operators and electricians will be medically examined once a year

 <p>تكرير TAKREER شركة أبوظبي لتكرير النفط We Refine Right</p>	<p>RUWAIS REFINERY EXPANSION PROJECT</p> <p>EPC-4 TANKAGE AND ASSOCIATED INTERCONNECTING PIPING</p> <p>AGREEMENT No. 09-5578-E-4</p>	<p>DAEWOO E&C</p>	
<p>PROJECT No. 5578</p>	<p>Doc. No. 5578-E4-HSE-HU-00019</p>	<p>Rev. 0</p>	<p>Page 19 / 38</p>


ATTACHMENT 4: Health Hazards

Hazards	Mitigation/Prevention	Remarks
<p>Malaria (only relevant to projects in Malaria affected countries and Regions)</p>	<ul style="list-style-type: none"> - Drainage of wet areas/pools that provide conditions allowing mosquito breeding - Vector control, including spraying of indoor work areas/facilities and vehicles - Nets over doors and windows - Mandatory use of long sleeves and trousers - Use of insect repellent over exposed parts of the skin - Chemoprophylaxis 	<ul style="list-style-type: none"> - Temporary Facility Plan to cover drainage of the site/temporary facilities areas drainage - Administration to put in place procedures for vector control - Expatriate personnel shall start malaria treatment before leaving the site and continue after demobilization for the duration specified in the medication

 <p>تكرير TAKREER شركة أبوظبي لتكرير النفط We Refine Right</p>	<p align="center">RUWAIIS REFINERY EXPANSION PROJECT</p> <p align="center">EPC-4 TANKAGE AND ASSOCIATED INTERCONNECTING PIPING</p> <p align="center">AGREEMENT No. 09-5578-E-4</p>	<p align="center">DAEWOO E&C</p>	
<p>PROJECT No. 5578</p>	<p>Doc. No. 5578-E4-HSE-HU-00019</p>	<p>Rev. 0</p>	<p>Page 20 / 38</p>

Hazards	Mitigation/Prevention	Remarks
<p>Yellow fever</p>	<ul style="list-style-type: none"> - Drainage of wet areas/pools that provide conditions allowing mosquito breeding - Vector control, including spraying of indoor work areas/facilities and vehicles - Nets over doors and windows - Mandatory use of long sleeves and trousers - Use of insect repellent over exposed parts of the skin - Vaccination 	<ul style="list-style-type: none"> - Temporary Facility Plan to cover drainage of the site/temporary facilities areas drainage - Administration to put in place procedures for vector control

Hazards	Mitigation/Prevention	Remarks
<p>Typhoid /gastrointestinal infections</p>	<ul style="list-style-type: none"> - Cleanliness of the temporary facilities and the site - Personal hygiene - Quality of food and drinking water - Evacuation and treatment of sewage and drain water - Regular medical examination of the food handlers and cleaning personnel - Regular audits of the temporary facilities, conducted by the Health Coordinator and Medical staff 	

 <p>تكرير TAKREER شركة أبوظبي لتكرير النفط We Refine Right</p>	<p>RUWAIS REFINERY EXPANSION PROJECT</p> <p>EPC-4 TANKAGE AND ASSOCIATED INTERCONNECTING PIPING</p> <p>AGREEMENT No. 09-5578-E-4</p>	<p>DAEWOO E&C</p>	
---	---	------------------------------	--

PROJECT No. 5578	Doc. No. 5578-E4-HSE-HU-00019	Rev. 0	Page 21 / 38
------------------	-------------------------------	--------	--------------

Hazards	Mitigation/Prevention	Remarks
Cholera	<ul style="list-style-type: none"> - Pre employment medical examination - Cleanliness of the temporary facilities and the site - Evacuation and treatment of sewage and drain water - Personal hygiene - Quality of food and drinking water - Regular medical examination of the food handlers and cleaning personnel - Regular audits of the temporary facilities conducted by the Health Coordinator and Medical staff 	



**RUWAIS REFINERY
EXPANSION PROJECT**

**EPC-4 TANKAGE AND ASSOCIATED
INTERCONNECTING PIPING**

AGREEMENT No. 09-5578-E-4

DAEWOO E&C


PROJECT No. 5578

Doc. No. 5578-E4-HSE-HU-00019


Rev. 0

Page 22 / 38

Hazards	Mitigation/Prevention	Remarks
Hepatitis	<ul style="list-style-type: none"> - Cleanliness of the temporary facilities and the site - Evacuation and treatment of sewage and drain water - Personal hygiene - Quality of food and drinking water - Regular medical examination of the food handlers and cleaning personnel - Regular audits of the temporary facilities conducted by the Health Coordinator and Medical staff 	
Transmissible sexual diseases	<ul style="list-style-type: none"> - Pre-employment medical examination - Education 	
HIV	<ul style="list-style-type: none"> - Pre-employment medical examination - Education 	


 <p>تكرير TAKREER شركة أبوظبي لتكرير النفط We Refine Right</p>	<p align="center">RUWAIS REFINERY EXPANSION PROJECT</p> <p align="center">EPC-4 TANKAGE AND ASSOCIATED INTERCONNECTING PIPING</p> <p align="center">AGREEMENT No. 09-5578-E-4</p>	<p align="center">DAEWOO E&C</p>	
<p>PROJECT No. 5578</p>	<p>Doc. No. 5578-E4-HSE-HU-00019</p>	<p>Rev. 0</p>	<p>Page 23 / 38</p>

Hazards	Mitigation/Prevention	Remarks
<p>Insect and rodents transmitted diseases</p>	<ul style="list-style-type: none"> - Cleanliness of the temporary facilities and the site - Use of waste bins with cover - Daily removal of organic waste - Fumigation 	
<p>Snake bites</p>	<ul style="list-style-type: none"> - Clearing of working areas, lay-down areas and open areas and areas between buildings of high grass and debris - Availability at the site and camp of antidote - Use of high shoes and long trousers - Use of gloves when picking up materials from ground or recesses 	
<p>Heat stress</p>	<ul style="list-style-type: none"> - Evaluation of workplace and activities that present a potential heat stress hazard - Scheduling of potentially hot jobs when heat stress conditions are minimum - Worker group rotation - Ventilation, shading and appropriate clothing - Availability of drinking water at working areas, also glucose. - Stoppage of outside (Open areas) work during extreme weather as per 	<p>Part of the Job Safety Analysis/Method Statement</p>


 <p>تكرير TAKREER شركة أبوظبي لتكرير النفط We Refine Right</p>	<p align="center">RUWAIS REFINERY EXPANSION PROJECT</p> <p align="center">EPC-4 TANKAGE AND ASSOCIATED INTERCONNECTING PIPING</p> <p align="center">AGREEMENT No. 09-5578-E-4</p>	<p align="center">DAEWOO E&C</p>	
<p>PROJECT No. 5578</p>	<p>Doc. No. 5578-E4-HSE-HU-00019</p>	<p>Rev. 0</p>	<p>Page 24 / 38</p>

	<p>local regulation</p> <ul style="list-style-type: none"> - Worker education against “ DEHYDRATION” 	
--	---	--

Hazards	Mitigation/Prevention	Remarks
<p>Work related diseases</p>	<ul style="list-style-type: none"> - HSE Plan and procedures - MSDS - Education and training - Inspections and audits - Enforcement of procedures 	<p>Assessment and evaluation process shall ensure compliance with all aspects of the occupational health and that lessons learnt are incorporated in the specific plans, procedures and method statements.</p>
<p>Work related accidents</p>	<ul style="list-style-type: none"> - HSE Plan and procedures - Job Safety Analysis - Education and training - Inspections and audits - Enforcement of procedures 	<p>Assessment and evaluation process shall ensure compliance with all aspects of the occupational health and that lessons learnt are incorporated in the specific plans, procedures and method statements.</p>

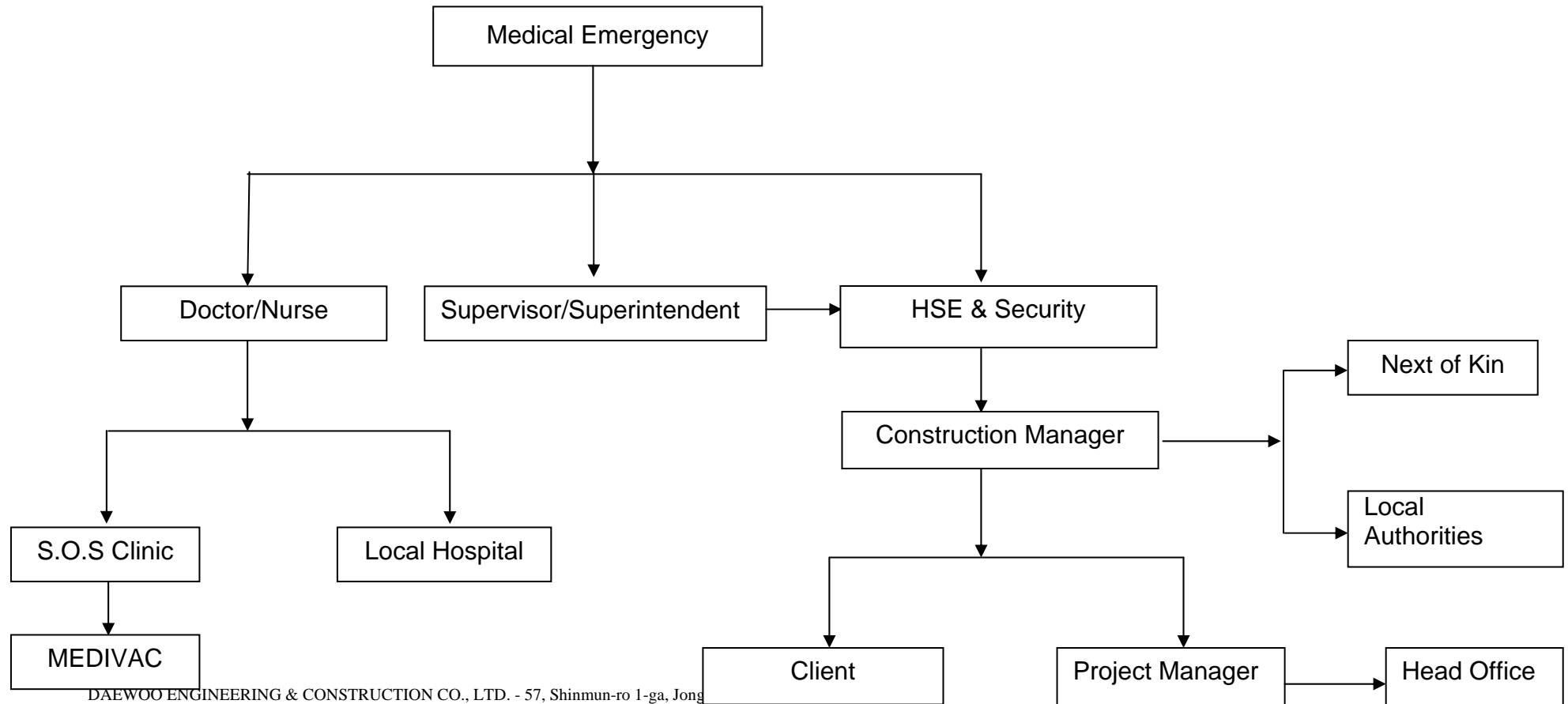
 <p>تكرير TAKREER شركة أبوظبي لتكرير النفط We Refine Right</p>	<p align="center">RUWAIS REFINERY EXPANSION PROJECT</p> <p align="center">EPC-4 TANKAGE AND ASSOCIATED INTERCONNECTING PIPING</p> <p align="center">AGREEMENT No. 09-5578-E-4</p>	<p align="center">DAEWOO E&C</p>	
<p>PROJECT No. 5578</p>	<p>Doc. No. 5578-E4-HSE-HU-00019</p>	<p>Rev. 0</p>	<p>Page 25 / 38</p>


<p align="center">Vibration</p>	<ul style="list-style-type: none"> - Preventing the source of vibration by engineered means such as balancing or vibration damping. - Providing seated workers with vibration-isolated seating. - Isolating the source of vibration by other measures. - Rotation of employees to prevent over exposure (preventing one worker from continues exposure). Time limits. - Get advice from the equipment manufacturer on safe use of the equipment - The use of anti vibration or low vibration tools, hand tools, grips and gloves. - Design the job so that poor posture (which may cause strain on hands and arms) is avoided. - Maintain tools to the manufacturer's specifications to avoid worsening vibration e.g. - ensure rotating parts are checked for balance and replace them if necessary; - Provide tool support to take the weight of the tool (e.g. tensioners or balancers) 	
<p>Radio Active, , Infra Red, Ultra Violet Alfa Beta Particle, X-rays, gamma rays.</p>	<ul style="list-style-type: none"> - Shielding of (isotopes) Ultra , Beta ,Gamma rays and X-rays - Increasing the working distance from the source of radiation. - Reducing the exposure time. 	

 <p>تكرير TAKREER شركة أبوظبي لتكرير النفط We Refine Right</p>	<p>RUWAIIS REFINERY EXPANSION PROJECT</p> <p>EPC-4 TANKAGE AND ASSOCIATED INTERCONNECTING PIPING</p> <p>AGREEMENT No. 09-5578-E-4</p>	<p>DAEWOO E&C</p>	
<p>PROJECT No. 5578</p>	<p>Doc. No. 5578-E4-HSE-HU-00019</p>	<p>Rev. 0</p>	<p>Page 26 / 38</p>

- Interposing protective barriers between the source of radiation and persons.

ATTACHMENT 5: Medical Emergency Communication Flow Chart




	RUWAIIS REFINERY EXPANSION PROJECT		DAEWOO E&C	
	EPC-4 TANKAGE AND ASSOCIATED INTERCONNECTING PIPING			
AGREEMENT No. 09-5578-E-4				
PROJECT No. 5578	Doc. No. 5578-E4-HSE-HU-00019	Rev. 0	Page 27 / 38	

ATTACHMENT 6: Health Activity Procedure

_____ The Activity Procedure will be maintained by the Health and Environment Coordinator and issued monthly to the Site HSE Manager.

No.	Description	By Whom	By When Frequency	Deliverables	Contract Requirements	Status	Remarks
1.	Personnel						
1.1	Health and medical personnel, their qualifications and responsibilities	Construction Manager HSE Manager	Before mobilization at Site	Health Management Procedure HSE Organization			
2.	Training						
2.1	Induction Training	HSE Manager	First day at the site	Training materials Training records (date, content & participants)			All personnel (Client, vendors and subcontractors)
2.2	Specific health related training	HSE Manager/ Medical staff	As required	Training materials Training records (date, content & participants)			
2.3	First aid training	Medical staff	First week at the site	Training materials Training records (date, content & participants)			Personnel selected from the workforce, mainly supervisors and foremen, one every 50 people.

 <p>تكرير TAKREER شركة أبوظبي لتكرير النفط We Refine Right</p>	RUWAIIS REFINERY EXPANSION PROJECT		DAEWOO E&C	
	EPC-4 TANKAGE AND ASSOCIATED INTERCONNECTING PIPING			
AGREEMENT No. 09-5578-E-4				
PROJECT No. 5578	Doc. No. 5578-E4-HSE-HU-00019	Rev. 0	Page 28 / 38	

No.	Description	By Whom	By When Frequency	Deliverables	Contract Requirements	Status	Remarks
3.	Workforce						
3.1	Pre-employment Medical Check	- CONTRACTOR - Subcontractors	Before mobilization to Site	Medical certificate			To be filed by Site HSE Manager and the Clinic
3.2	Food handlers and cleaning personnel	Medical staff	Every six months	Medical certificate			
3.3	Heavy equipment crane operators and electricians	Medical staff	Once a year	Medical certificate			
4.	Planning and Risk Assessment						Assessment and evaluation to ensure compliance & incorporation of lessons learnt
4.1	Project overall health hazard assessment	HSE Manager	- Construction planning - Start of construction	Health Procedure (this document)			Temporary Facilities Plan to also cover preventative and mitigation measures.

No.	Description	By Whom	By When Frequency	Deliverables	Contract Requirements	Status	Remarks
4.2	Site specific health hazard assessment	- HSE Manager - Health Coordinator - Medical staff	Start of construction	- Procedures - MSDS			Procedures to cover preventative and mitigation measures.
4.2	Work specific health hazard assessment	- HSE Manager - Medical staff	As required	- Procedures - MSDS - JSA/Method Statement			Procedures to cover preventative and mitigation measures.
5.	Medical and Sanitary Facilities						
5.1	First Aid Facilities including contents of first aid boxes	- HSE Manager - Health Coordinator - Medical staff	Start of construction	Temporary Facilities Plan			Medical equipment and supplies by Site Doctor/Nurse
5.2	Ambulance	HSE Manager	Start of construction	N/A			
5.3	Sanitary and Washing Facilities	Environmental Coordinator	Start of construction	Temporary Facilities Plan			



**RUWAIS REFINERY
EXPANSION PROJECT**

**EPC-4 TANKAGE AND ASSOCIATED
INTERCONNECTING PIPING**


AGREEMENT No. 09-5578-E-4

DAEWOO E&C

PROJECT No. 5578	Doc. No. 5578-E4-HSE-HU-00019	Rev. 0	Page 30 / 38
------------------	-------------------------------	--------	--------------

No.	Description	By Whom	By When Frequency	Deliverables	Contract Requirements	Status	Remarks
6.	Housekeeping and Waste Disposal						
6.1	Camp maintenance and cleaning	Camp Manager Admin Manager	Daily	Sanitation Guide			A log of the personnel living at the Camp shall be kept.
6.2	Provision for Trash and Debris Receptacles	Construction Manager	Start of construction	Waste management Procedure			
6.3	Collection and removal of rubbish/waste	Administration Manager	Daily	Waste Management Procedure			
6.4	Sewage, Drainage System and Treatment of Sanitary Waste	Administration Manager		- Temporary Facilities Plan - Waste Management Procedure	-		
6.5	Pest Control	Administration Manager	Twice a week	Sanitation Guide			
6.6	Housekeeping of Construction Areas and temporary facilities	Superintendents & Supervisors	Daily	Waste Management Procedure			Including Site Temporary Facilities

No.	Description	By Whom	By When Frequency	Deliverables	Contract Requirements	Status	Remarks
7.	Food & Water Quality						
7.1	Drinking Water	Environmental Coordinator	Monthly	- Analysis records - Sanitation Guide			It depends on the water supply source. Log shall be maintained.
7.2	Catering Services	Administration Manager		Sanitation Guide			
8.	Emergencies						
8.1	First response team	HSE Manager	One month before beginning of construction	Emergency Procedure			In coordination with Client HSE and Security Plant Organization
8.2	Medical Emergencies	HSE Manager	One month before beginning of construction	Emergency Procedure			In coordination with Client HSE and Security Plant Organization
9.	Inspections and Reporting						Records to be kept for 2 years after Acceptance
9.1	Inspections of camp & temporary facilities	- HSE Manager Medical staff	Monthly	Inspection reports & Action Item List			

 <p>TAKREER شركة أبوظبي لتكرير النفط We Refine Right</p>	RUWAI REFINERY EXPANSION PROJECT		DAEWOO E&C		
	EPC-4 TANKAGE AND ASSOCIATED INTERCONNECTING PIPING				
AGREEMENT No. 09-5578-E-4					
PROJECT No. 5578		Doc. No. 5578-E4-HSE-HU-00019		Rev. 0	Page 32 / 38

No.	Description	By Whom	By When Frequency	Deliverables	Contract Requirements	Status	Remarks
9.2	Health audits	- HSE Manager Medical Staff		Audit report			As part of HSE Audits
9.3	Incident Reporting	HSE Manager Superintendent	As required	Investigation report			
9.4	Overall Reporting	HSE Manager	Monthly	Report			part of the Monthly Progress Report

Notes:

- (1) “By Whom” may indicate the persons
 - Responsible for organizing, supervising, coordinating or controlling an activity
 - Who will perform/participate in an activity
- (2) “By When” may indicate the completion or start of an activity or the date by which deliverables are to be issued.
- (3) “Deliverables” may specify either document to be prepared or collected. Unless otherwise specified in “Remarks” column, deliverables other than the Project deliverables (e.g., MOM, reports, certificates and action lists) are to be filed by the party/person responsible for that particular activity.
- (4) In the “Status” column, the following words mean
 - Comp : the item has been completed
 - Yes: the item is on-going
 - Blank: the item has not been initiated yet



**RUWAIS REFINERY
EXPANSION PROJECT**

**EPC-4 TANKAGE AND ASSOCIATED
INTERCONNECTING PIPING**

DAEWOO E&C

AGREEMENT No. 09-5578-E-4

PROJECT No. 5578

Doc. No. 5578-E4-HSE-HU-00019

Rev. 0

Page 33 / 38

Attachment 7: Health & Hygiene Inspection Check List

HEALTH & HYGIENE INSPECTION FOR FACILITIES & FIELD LOCATIONS

Responsible Person: 1. CONTRACTOR HSE Manager / Supervisor / Officer
2. Camp Boss / Admin Asst.

Frequency of Checking: DAILY / WEEKLY / MONTHLY

Report To: PM - Optional
HSE Manager - Weekly
Client - Weekly

FACILITIES INSPECTED:

DATE OF INSPECTION :

INSPECTED BY :

CONTRACTORS REPRESENTATIVE:

Serial	Question	Yes/No	Corrective Action	Preventive Action	Comment/Action By
1.	The Food Service Contractor Has A written Program For Food Service And Hygiene				
2.	Half Yearly Medical Checks Are Current For Food Service Staff.				
3.	The Contractor Has Written Inspection Records And Cleaning Schedules.				
4.	Regular Food Hygiene training is carried out and records made available.				
5.	Food Handlers Are Prohibited From Working When Sick.				

6.	Staff Uniforms, Aprons, And Head Covers Are Provided And Laundered Regularly.				
7.	Food Handlers Maintain A Clean And Neat Appearance				
8.	Material Safety Data Sheets are made available				
9.	There Is A Properly Stocked First-Aid Kit Available. Is It Visible? A qualified First Aider is amongst the catering staff				
10	Fire Fighting equipment is readily available and catering Staff had Training in its usage				
11	Glasses And Cups Are Stored Upside Down On Clean Shelves Or Racks.				
12	Dishes, Cups And Glassware Are Free From Chips And Cracks.				
13	Dishwashing Area Is Maintained In A Clean And Orderly Manner.				
14	The Dishwasher Is Operating Properly And At Recommended Temperatures: Wash Cycle 60°-74° C Rinse Cycle 71° -82° C Final Rinse 76° -87° C				
15	Pots, Pans, And Utensils, Which Are Washed Manually, Are Being Disinfected with Chemical or Bleach Solution				

16	Washed Items Are Being Air-Dried. The Practice Of using Drying Clothes Is Discouraged.				
17	Dining Room And Kitchen Areas Are Posted As “No Smoking”. The Rule Is Observed.				
19	Hand wash facility with soap to be provided near dining Area				
20	The Dining Area Is Clean And Orderly. Hand wash facility with soap to be provided near dining area.				
21	Toilet Facilities Are Clean				
22	Adequate Soap And Hot Water Available In Toilet Areas				
23	Signs Are Displayed Instructing Staff To Wash Hands After Using The Toilets				
24	Kitchen Waste Storage Is Clean, Orderly, Odor Free, And Away From Food Preparation Areas. Flies Are Controlled.				
25	Kitchen Waste Removed Daily And Properly Disposed Of.				
26	Floor Drains Are Provided In Sink And Dishwashing Areas.				
27	A Grease Trap Is Provided On the Kitchen wastewater Line.				
28	Sink And Wastewater Drains Are Provided With traps to Prevent Sewer Gas Intrusion				

	Food Is Served At the Correct Temperatures Hot Foods > 60° C Cold Food < 4° C				
29	Samples of all food are being retained for a period of 72 hrs after being served on the menu. Storage is to be in tight lid containers & stored in a normal refrig.				
30	Disposable gloves/tongs are being used when sandwiches are being prepared.				
31	All salad and sandwich products are being disposed of 24 hrs after preparation.				
32	Ice making Machines Are Self Dispensing Or Provided With Scoops. Connected To Potable Water And Are Clean.				
33	Drinks Dispensers Are Clean And Disinfected.				
34	Serving Lines And Areas are Clean				
35	A Hygienic Means of Controlling Flies is in Place.				
36	Walls, Ceilings, And Floors Are Clean And Grease Free.				
37	All Equipment Surfaces Are Free Of Corrosion And in Good Repair.				
38	Cutting Boards Are In Good Repair, Free of Spoil, Scrapes, And Cracks. They Are Cleaned And Disinfected After Each				

	Use, e.g. Meat To Chicken. Correct color coded boards are being used.				
39	Frozen Foods are Being Thawed Properly (Thawed In Refrigerators Not At Room Temperature.)				
40	Grease Filters Are Clean.				
41	Cleaning Agents Are stored Away From Food Products.				
42	Storage Areas Are Orderly And Unobstructed.				
43	Food Storage Areas Such As Refrigerators Are Used Exclusively For Food Storage.				
44	Refrigerators And Freezers Are Working At Proper Temperatures: Refrigerators 1°C To 4° C Freezers -14° C To -18°C				
45	Food Storage Shelves Are Clean And Free Of Residue. Wooden Shelves Are Prohibited.				
46	All Unpacked Meats & Foodstuffs Requiring Refrig. Are Stored In Stainless Steel or Plastic Trays.				
47	Containers For Cereals, Sugar, Etc, Are Clean Tight Fitting Lids.				
48	Root Vegetables Are Stored In A Cool Area And Free Of Rot Or Spoilage.				

49	Canned Goods Are Stored In Neat, Orderly, And Free From Damaged Or Leaking Stock.				
50	A Stock Rota System Is In Use For All Foodstuffs. A Record is Kept Of Expiry Dates Or Use By Dates.				
51	There Are No Signs Of Infestations Or Vermin.				
52	The Dining Area And Kitchen Has An Overall Clean, Tidy And Well Maintained Appearance.				
53	Working of air conditioners in dining area				
54	Other Observations:				