ENVIRONMENTAL MANAGEMENT PLAN

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.**

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 All previous issues are hereby superseded and are to be destroyed.

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SIGNED (Initials)							

NOTES:

(a) Revisions are denoted by a vertical line placed in the right-hand margin against the revised text.

(b) PREP = Prepared by, CHKD = Checked by, REVD = Reviewed by, APP'D = Approved by.

(c) In case of conflict between any requirements stipulated in this document with the contractual requirements, the contractual requirements shall prevail.

REVISION INDEX DETAILS

Rev	Location of Change	Brief Description of Change

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1. PURPOSE

This procedure outlines the responsibilities of CONTRACTOR in managing environment for the protection of air, land and any body of water. The Project Environmental Management Procedure shall be prepared with regarding to specific condition and take approval from COMPANY, if required.

2. SCOPE

This procedure shall be implemented in all CONTRACTOR projects. The procedure shall describe the environmental issues, risks and mitigation procedures associated with the construction activities and environmental programs in place to address these issues.

It shall be based and shall comply with the applicable laws, decrees, administrative rules & regulations, relevant COMPANY policies, standard operation procedures, and international safe work practices.

3. DEFINITIONS AND ABBREVIATIONS

COMPANY	-	Abu Dhabi Oil Refining Company (TAKREER)
CONTRACTOR	-	Daewoo Engineering & Construction Co., Ltd. or DAEWOO
PROJECT	-	EPC-4: Tankage & Associated Interconnecting Piping EPC Work Package for Ruwais Refinery Expansion (RRE) Project
WORK	-	means and includes all work and services to perform and GOODS and other things to provide by CONTRACTOR for EPC-4 Package of RRE Project.
SUBCONTRACTOR	-	any person, firm, or company, employed by CONTRACTOR to perform any work or duty on their behalf
Home Office	-	Execution location of the PROJECT's engineering and procurement activities in Seoul, Korea
UAE	-	United Arab Emirates
SITE	-	Location of the Project in Ruwais, Abu Dhabi, UAE
AGREEMENT	-	means the Signature Agreement, the Articles of Agreement and the EXHIBITS
Document	-	Any form, letter, facsimile, contract, subcontract, specification, requisition, drawing, or record of any kind required to transmit information from one party to another. It also includes computer generated drawings, lists, charts etc., and other data used to form a permanent record of the Project progress and "As-Built" condition.

4. POLICY

CONTRACTOR recognizes that the Earth environment is essential and will comply with the following environmental policy for planning and conducting the construction business for human survival not only for present but also for future generation.

CONTRACTOR shall establish and observe the Environmental Management System (EMS) based on the ISO 14001:2004.

CONTRACTOR shall comply with the environmental legislation, regulation and other requirements, and reflect and collect the public opinions from environmental groups and interested parties.

CONTRACTOR shall identify the environmental aspects of all factors derived from the process of construction project on planning, designing, construction and servicing, etc., and shall actively perform an Environmental Impact Assessment, environmental prevention and eradication of pollution.

CONTRACTOR shall set environmental objectives as below and do continual improvement in order to accomplish the environmental policy.

- CONTRACTOR shall minimize the construction wastes, and then establish the target of disposal cost for wastes proportional to sales amount and achieve it.
- CONTRACTOR shall minimize the source of pollution by establishing target of saving energy and resources and implementing it.
- CONTRACTOR shall strive that there is no environmental accidents and violation of environmental legislation and regulation.
- CONTRACTOR will audit and monitor waste disposal and recycling. Sub contractors to ensure compliance with all Environmental regulations.

This environmental policy shall be open to the public. Every employee of CONTRACTOR and subcontractor should understand and comply with the policy, and shall actively participate in and make utmost efforts to the environmental management activity.

5. DEFINITION

5.1 Body of Water

A body of water is any significant accumulation of water such as an ocean, a lake, or a river. Some bodies of water can be man-made, or artificial, such as a pond, lake or harbor, but most are naturally occurring geographical features. Bodies of water that are navigable are known as waterways.

5.2 Landfill

A landfill, also known as a dump, is a site for the disposal of waste materials by burial and is the oldest form of waste treatment. Landfills have been the most common methods of organized waste disposal. Landfills are used for waste management purposes, such as the temporary storage, consolidation and transfer, or processing of waste material (sorting, treatment, or recycling).

5.3 Environmental Impact Assessment

An Environmental Impact Assessment (EIA) is an assessment of the likely influence a project may have on the environment. “Environmental Impact Assessment can be defined as: The process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made. The purpose of the assessment is to ensure that decision-makers consider environmental impacts of the project during the project site mobilization for construction up to operation.

5.4 Hazardous Material

Any gaseous, liquid, or solid, which due to its quantity, physical, chemical or infectious characteristic has, the potential to harm health or the environment when improperly handled, treated or disposed of hazardous materials are classified into the following categories:

Flammables, Explosives, Pesticides, Chemicals and Hospital waste. Others are Pharmaceuticals, non-ferrous metals, corrosive chemicals/materials/wastes that may react with other materials dangerously (e.g. Glue, paints, paint thinner, Air freshener, detergents and nail polish).

5.5 Waste

Waste is an unwanted or undesired material or substance (solid or liquid). It is also referred to as rubbish, trash, garbage, or junk depending upon the type of material and the regional terminology.

6. RESPONSIBILITIES

6.1 Project Manager

He is the main responsible person in the implementation of the Environment Management Procedure. He shall create an Environmental team through HSE Manager that will make sure that all the provision of this procedure is followed. The Project Manager shall make sure that this procedure is reviewed and updated based on the current Environmental Regulations set up by the statutory authority.

6.2 HSE Manager

The HSE Manager has the responsibility of implementing Environmental Management Procedure that will minimize the effect and impact of the construction activities in the surroundings , achieve the reduction of waste generated, recycling of waste in the project and comply with the recommendation stated in Environmental Impact Assessment. He has the responsibility to make sure that all site personnel are trained regarding environmental awareness program. In carrying out the responsibility, he shall maintain effective interface with the Project Manager and the COMPANY.

6.3 HSE Supervisor

The HSE Supervisor is responsible in the site implementation of the environment management system. He shall be responsible for inspections to make sure that all facilities are in place to avoid environmental incident. Whenever there is any environmental incident, he will determine the appropriate action particular to the event. He is charged with the responsibility of training in matters of environment awareness program. He shall coordinate with the site construction supervisor in proper disposal of the waste generated during the course of their activities. He will make sure that the proper PPE (ear plug & ear muff) is use in minimizing the hearing loss effect of the loud noise produce in the site.

He shall be responsible for daily inspection of storage and critical activities, which may cause hazardous substances accidental release or spill into the environment; with a view of safeguarding the environment and the installed facilities. He shall monitor the gas emissions from the smoke producing equipment and the sound level in the fabrication shop or any area where the noise level is high. He will carry out his activities through inspections and reporting on daily basis to the HSE Supervisor through the use of the environment checklist. He is responsible for assembling training and equipping a qualified spill response team for site.

6.4 Supervisor

Supervisor shall be responsible in maintaining a healthy environment in their jurisdiction. It shall be in conformance to an appropriate standard to prevent any environment incident. They are expected to use the results of the monthly inspections for planning their maintenance schedules. When there is a release of any kind in their areas, they are expected to coordinate the containment and clean up exercise and to arrange for immediate disposal of all associated wastes. He shall make sure that his subordinates clearly understood and abiding the environmental site regulations. He will ensure proper waste segregation in his area of responsibility.

7. WASTE MANAGEMENT

This waste management plan shall provide a practical guide designed to identify all the wastes that will be generated throughout the construction of the CONTRACTOR project and to define options for their re-use or management.

This plan has been developed to ensure adequate response to the potential environmental impacts of the wastes produced by the project. It is designed to achieve and maintain environmentally sound practices for sanitation and for conservation of the environment.

To achieve this purpose, CONTRACTOR will emphasize the following:

(1) Ensure COMPANY’s standards and Local Environmental Laws are implemented.

(2) Optimize the use and reuse of materials.

(3) Analyze the environmental implications of all works activities.

(4) Collect and dispose of waste promptly

(5) Stringent housekeeping standards

(6) Monitoring and inspection of all construction activities to ensure environmental compliance.

(7) Keep accurate records of all waste streams with a focus on reduction.

(8) Recycle/recovery by conversion of wastes into usable materials and/or extraction of energy or materials from wastes such as recycling scrap metals.

(9) Identify and evaluate new technology or methods applicable to waste reduction, recycling and disposal.

(10) Enhance employee and subcontractors awareness of waste minimization techniques.

(11) Effective training

7.1 Waste Analysis

Waste shall be analyzed based on its physical characteristics as well as its chemical composition; proper waste analysis shall be the basis in waste segregation, disposal and containment.

(1) Types of Waste

(1.1) Hazardous Waste

Waste materials are classified as hazardous wastes when they exhibit one or more of the characteristics shown below or are hazardous by definition. The rules for handling hazardous materials may be different from the rules for handling a non-hazardous waste.

Hazardous Wastes exhibit one or more of the following characteristics.

- Explosive
- Flammable
- Spontaneous Combustion Potential
- Oxidizing Potential
- Toxic
- Corrosive
- Reactive

A hazardous waste may be made non-hazardous by removal of the hazardous characteristic. Thus oily wastes- may be made non-hazardous by incineration of the oil, providing, of course, the ash is non-hazardous. Wastes that have too high or too low of pH may be made non-hazardous by neutralization, if that is their only hazardous characteristic.

(1.2) Non-Hazardous Waste

Non-hazardous-wastes are all wastes that are not hazardous wastes and are not inert construction wastes. This includes common garbage, office wastes, construction wastes that are burnable such as boxes, and treated sewage effluent and sewage sludge.

(1.3) Inert Construction Wastes

Inert construction wastes are wastes that are solid and on disposal in a landfill are not reasonably expected to undergo physical, chemical, or biological changes to such an extent as to produce substances that may cause an adverse effect. Such wastes include but are not limited to demolition debris, concrete, asphalt, glass, ceramic materials, unpainted scrap metal, and dry timber or wood that has not been chemically treated, but does not include hazardous wastes.

Note that hazardous or non-hazardous wastes, herein, cannot contaminate the scrap metal and other wastes defined. Wastes contaminated with hazardous substances are hazardous by definition.

(2) Waste Identification and Categorization

The followings are some of the identified wastes types expected for most of the CONTRACTOR projects and the waste categorization. Please refer to Waste Management Procedure (DTMS-HSE-PE004) for brief description and proper disposal procedure for each waste.

(2.1) Oily waste

(2.2) Paint waste

(2.3) Cement and concrete waste

(2.4) Vegetation debris

(2.5) Scrap metal

(2.6) Wood waste

(2.7) Glass

(2.8) Plastics

(2.9) Grit blasting waste

(2.10) Waste batteries

(2.11) Tires

(2.12) Domestic waste

(2.13) Medical waste including blood soaked materials, needles and syringe

(2.14) Drums and barrels

(2.15) Hydro test fluids

(2.16) Radioactive waste

7.2 Waste Management and Disposal

All the wastes generated during all phases of all CONTRACTOR overseas projects, ranging from the most inert to the most toxic shall be collected and managed in accordance with this procedure.

(1) Waste Inventory

The HSE Manager will maintain a waste inventory to keep record of the types and quantities of waste present at the job sites. This record shall be used to monitor the effectiveness of the waste management program. The waste inventory shall be submitted to CONTRACTOR management and COMPANY on a monthly basis if requested.

(2) Waste Segregation

Given the complex nature of the waste, CONTRACTOR will undertake a waste segregation exercise involving sorting and separating waste on the basis of its characteristics. Waste materials shall be segregated at source by providing coloured and marked (with universal symbols and written in English) bins for storing the waste. All employees will be trained on the procedures and importance of proper waste segregation.

(3) Waste Collection and Storage

All waste generated on site will be removed promptly to the waste depot. Sufficient numbers of coloured and labelled collection bins shall be located, in all waste producing areas. Each of these containers shall have a tight sealing lid. No waste collection bin shall be allowed to overflow before it is emptied, and waste storage receptacles shall be replaced promptly, in the event of damage.

The main waste depot will be located in a central position. The depot collection facility will be made of concrete, lined with polyethylene and fitted with an appropriate drainage line. (From time to time any leaching will be analyzed if hazardous or if it can be rendered non-hazardous). The waste depot shall be kept tidy, free of vermin, and continuously fumigated and sanitized with appropriate disinfectants.

Hazardous wastes shall be segregated from non-hazardous wastes and shall be kept in a separate lockable fenced area.

(4) Waste Transportation System

Solid wastes will be collected regularly and transported to the appropriate disposal site. Sanitary wastes will be transported to the designated sewage plant by an underground sewer collection system where possible. Construction sanitary wastes in camps will be handled in chemical toilets. Contaminated soils will be collected by earth moving equipment, loaded into trucks, and transported to remediation or disposal site.

(5) Waste Disposal Options

All disposal options will be contracted out to waste contractors approved by the appropriate organizations and recognized by the COMPANY. Please refer to Waste Management Procedure (DTMS-HSE-PE004) for brief description of waste disposal options. This could be in the form of;

(5.1) Landfill

(5.2) Surface discharge

(5.3) Land application

(5.4) Neutralization/stabilization

(5.5) Reclaiming/re-use

(5.6) Burial

7.3 Waste Handling, Training and Monitoring

Any worker or subcontractor employee who handles any type of waste will use Personal Protective Equipment (PPE) appropriate to the type of waste involved.

CONTRACTOR will develop and implement a waste tracking mechanism to monitor waste from the point of generation to final disposal. This tracking mechanism shall be subject to daily checks to ensure that all waste generated for a given day are effectively tracked, collected and treated.

Environmental Policy & concerns, including waste management, will be a part of the HSE Induction training that every employee will undergo. CONTRACTOR will give further training in project environmental procedures and requirements to the workers assigned to the environmental management team.

Environmental Awareness Training shall be conducted annually to all employees while a bi-annual training shall be conducted to all personnel that will be working or near hazardous substances.

8. SITE ENVIRONMENTAL CONTROL

8.1 Dust Pollution during Construction Phase

CONTRACTOR shall adequately spray the area with water especially the road under construction to prevent or minimize dust. Water spraying construction areas shall be done twice a day, morning and afternoon on a regular basis. Dust will also be generated from the following activities/elements;

- Construction road development.
- Excavations and trenching activities.
- Sand stock piling.
- Separation of different grades of rock or earth material.
- Structural works such as grinding, drilling, sandblasting etc.
- Weather elements such as high wind levels, dust storms, heat and humidity levels etc.

CONTRACTOR will ensure that all site workers are well equipped with suitable PPE to counter some of these effects. Certain working areas will have a canvas form of sheltering for protection against elements. The site conditions will be monitored by the Environmental Supervisor. He will inform the HSE Manager of the conditions on site at all times. The CONTRACTOR HSE Manager will assess the situation and act accordingly.

8.2 Body of Water and Drinking Water Station

CONTRACTOR shall protect all forms of body of water around the site that will be affected during the construction period this includes river, sea, swamp or lakes.

HSE Supervisor shall conduct regular inspection and waste water sampling & analysis in all waste water collection and temporary storage area; all finding shall be documented and to be reported to HSE Manager. No waste water coming from the construction site will be discharge to this body of water without proper treatment or tested to be safe and will not harm any form of living things living in the environment.

Waste water that does not classified as safe to disposed to environment shall be collected by designated waste subcontractor and to be treated according to local environmental procedure. Waste subcontractor shall be monitored by HSE Manager if it is complying with the environmental standard by regular audit and inspection of its waste water treatment facilities and dumping area (Subcontractors Safety Management Procedure – DTMS-HSE-PG009).

Lack of culverts across road, lack drainage along the road, road junction and slit sedimentation will result to flooding. CONTRACTOR will provide proper culverts and drainage systems to continuously allow free movement of water across the road. To prevent siltation, properly designed silt trap shall be provided. The drainage shall go along gentle slope so as to avoid erosion and siltation at the inlets and shall be linked to the existing drainage system.

The impacts of storm water runoff will result in accumulation of pollutants in the collection system and could have an unacceptable impact on the receiving water body.

General guidelines are as follows:

- Environmental Supervisor shall monitor potentially contaminated storm water and skim free oil;
- Contaminated storm waters which run off from areas within the project shall be directed through appropriate treatment facilities
- Runoff water's solid particle shall be allowed to subside before discharged.

Drinking water locations should be provided with hard standing area to prevent the accumulation of water on ground & same should be connected to sewage sump to be tankered away. As the ground is rocky & water does not percolate into earth, it accumulates on surface leading to unhygienic conditions; hence water should not be allowed to collect on surface of earth.

8.3 Noise Control

CONTRACTOR shall administer a continuing, effective hearing conservation program, as described in this section, whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level (TWA) of 85 dB(A) (10 TWA of 83dB(A)) decibels measured. For purposes of the hearing conservation program, employee noise exposures shall be computed in accordance with the applicable standard formula, and without regard to any attenuation provided by the use of personal protective equipment and other hearing protection program as required in Table 2.

(1) Hazards of Exposure to noise include:

(1.1) Annoyance and irritation.

(1.2) Affects concentration and efficiency.

(1.3) Causes fatigue and accident proneness.

(1.4) Prevents ear from registering other sounds, instructions and warnings.

(1.5) Exposure to excess noise causes damage to the inner ear and can lead to permanent loss of hearing.

(2) Limiting Exposure to noise can be reduced by:

(2.1) Engineering and control methods (e.g. installation of silencer, sound controlled equipment enclosure, replacing equipment with a low noise producing equipment if possible).

(2.2) Job rotation.

(2.3) Providing rest rooms or acoustic refuges.

(2.4) Re-arranging work locations to limit conflicting work hazards.

(2.5) PPE (ear plug, ear muffs).

(3) Monitoring noise values associated with Construction Equipment.

(3.1) Posting signs indicating high noise areas.

The below Table 1- Noise Level of Construction Equipments - features approximate noise levels associated with general construction equipment.

Sound pressure level in dB(A)	Situation
140	Jet aircraft at 30 meters
130	Pain threshold / impact noise /riveting hammer
125	Pneumatic breaker un-silenced
120	Dozer normal operation Pneumatic rock drills Scrapers
115	Dozer ripping Hand held disc cutter
110	Tracked loaders Tripper truck unloading and levelling hardcore Graders levelling ground

Sound pressure level in dB(A)	Situation
105	Wheeled excavator/loader(Trenching) Compressors(3.5m^3/min) Road roller(rolling gravel/Brick) Drilling into a concrete beam(Electric percussion drills) Diesel driven generator for arc welding Circular saws
100	Batching plant
95	Concrete mixer Loading/unloading scaffold materials
90	Electric drill under normal loading / heavy vehicle
85	The action point for mandatory hearing protection and signs
80	Very busy traffic
70	Private car
60	Ordinary conversation

Employers and Employees' duties & action plans based on sound level. (Table 2)

Employer Duties	**Action level**		
	80 dB(A)	85 dB(A)	140 dB(A)
	1	2	Peak
Reduce risk – lowest level possible	X	X	X
Assessments and records Personal Dosimetry	X	X	X
Noise control program		X	X

Formation and training	X	X	X
Required Ear protection		X	X
Provide ear protection if asked	X		
Provide, maintain and ensure use of ear protection		X	X
Ensure noise control equipment used and maintained	X	X	X
Provide training on the different types of hearing protection and their proper use	X	X	X
Employee Duties			
Use ear protection		X	X
Report defects	X	X	X

8.4 Soil Erosion

The excavated or embanked area, shoulder on side slopes or borrow pits are the area where soil erosion are likely to occur during heavy rain. To avoid soil erosion, all exposed surface shall be regressed or covered by stone pitching, lining concrete, spill way and compaction of the embankment area shall be carried out.

8.5 Ozone depleting refrigerants

All the subcontractors shall slowly phase out the refrigerants if they are ozone depleting in nature.

Any new equipment involving refrigerants should only be Ozone friendly.

All subcontractors should submit an inventory of refrigerants including the camp & office & advise CONTRACTOR, how they intend to proceed with.

8.6 Operating Procedures

The operating procedures for various operations such as Acid neutralization, Auto Effluent Grease pit operation, Batching plant effluent neutralization should be displayed at the corresponding locations. The operating personnel in the corresponding locations should be trained to operate the above procedures.

9. COMMUNITY ENVIRONMENTAL CONTROL

9.1 General Hazards

Project team should implement risk management strategies to protect the community from physical, chemical, or other hazards associated with sites under construction.

Risks may arise from inadvertent or intentional trespassing, including potential contact with hazardous materials, contaminated soils and other environmental media, buildings that are vacant or under construction, or excavations and structures which may pose falling and entrapment hazards. Risk management strategies may include:

- Restricting access to the site, through a combination of institutional and administrative controls, with a focus on high risk structures or areas depending on site-specific situations, including fencing, signage, and communication of risks to the local community
- Removing hazardous conditions on construction sites that cannot be controlled effectively with site access restrictions, such as covering openings to small confined spaces, ensuring means of escape for larger openings such as trenches or excavations, or locked storage of hazardous materials

9.2 Noise impact in the Community

Construction noise in the community may not pose a health risk or damage peoples' sense of hearing, but it can adversely affect peoples' quality of life. To some degree, construction noise can be a contributing factor to the degradation of someone's health in that it can cause people to be irritated and stressed and can interrupt their ability to sleep - all of which may lead to higher blood pressure, anxiety, and feelings of animosity toward the people or agencies responsible for producing the noise.

In fact, several of the traditional definitions of "noise" (i.e. unwanted or undesirable sound) can be associated with construction noise. Construction noise can be perceived or considered to:

- be too loud
- be impulsive
- be uncontrollable
- contain annoying pure tones
- occur unexpectedly
- occur at undesirable times of day
- interrupt people's activities

Construction noise has the potential to disturb people at home in their residences, in office buildings or retail businesses, in public institutional buildings, at locations of religious services, while attending sporting events, or when on vacation.

Noise impacts can occur on any project involving the construction of any project. While the magnitude of the impact construction noise may have on a community may not be known early in the project development stages, measures can be implemented during the design phase that can help to reduce the anticipated noise impacts at sensitive receptors.

9.3 Mitigating the effects of noise to Community during construction

The level of detail in a contract required to address construction noise mitigation is dependent on the complexity of the project, the amount and type of work required, and the sensitivity of the area beyond the project boundary. Therefore, not all projects require the same amount of detail.

The effective control of construction noise can be achieved in much the same manner as the control of operational traffic by considering the following techniques:

- Alternative design options
- Mitigation at the source
- Mitigation along the path
- Mitigation at the receiver

9.4 Air Emissions

Construction activities may generate emission of fugitive dust caused by a combination of on-site excavation and movement of earth materials, contact of construction machinery with bare soil, and exposure of bare soil and soil piles to wind. A secondary source of emissions may include exhaust from diesel engines of earth moving equipment, as well as from open burning of solid waste on-site. Techniques to consider for the reduction and control of air emissions from construction and decommissioning sites include:

- Minimizing dust from material handling sources, such as conveyors and bins, by using covers and/or control equipment (water suppression, bag house, or cyclone)
- Minimizing dust from open area sources, including storage piles, by using control measures such as installing enclosures and covers, and increasing the moisture content
- Dust suppression techniques should be implemented, such as applying water or non-toxic chemicals to minimize dust from vehicle movements
- Selectively removing potential hazardous air pollutants, such as asbestos, from existing infrastructure prior to demolition
- Managing emissions from mobile sources
- Avoiding open burning of solid

9.5 Wastewater Discharges

Construction activities may include the generation of sanitary wastewater discharges in varying quantities depending on the number of workers involved. Adequate portable or permanent sanitation facilities serving all workers should be provided at all construction sites. Sanitary wastewater in construction and other sites should be managed as per Waste Management Procedure.

9.6 Traffic Safety

Construction activities may result in a significant increase in movement of heavy vehicles for the transport of construction materials and equipment increasing the risk of traffic-related accidents and injuries to workers and local communities. The incidence of road accidents involving project vehicles during construction should be minimized through a combination of education and awareness training. Road re-routing shall also be implemented.

Guidelines are provided by the TAKREER Traffic Safety Control Procedure CP-08. Vehicle and road safety procedures to be implemented

9.7 Community Complaint Control

CONTRACTOR will establish a community complaint control procedure that will handle all the process and requirements in dealing with the complaint that will be raised by the community during the construction period.

The following shall be the guidelines to be followed in handling community issues;

1) Consultation and information with the community regarding the effects of the construction in the area.
2) Discussed the action to be taken by the Project management to lessen the impact of the construction to the community.
3) Establishing an external environmental committee compose by the community leaders and project management.
4) Collect and record in the Community Complain Log book all the complaint raised by the community.
5) Discussed during project management meeting all the issues; immediate action shall be done by project management for the items that can be handled easily or needing immediate attention.
6) Head Office and external agencies shall be sought for critical Items that cannot be handled easily by the project team.
7) All legal requirements shall be followed.

10. HEALTH, SAFETY AND ENVIRONMENTAL IMPACT ASSESSMENT (HSEIA)

A Health, Safety & Environmental Impact Assessment (HSEIA) shall be carried out and may be linked to the cost-benefit analysis. The objective of the HSEIA is to ensure that health, safety & environmental aspects are addressed and potential problems are foreseen at the appropriate stage of project design and construction. EIA shall be envisaged as an integral part of the planning process and initiated at the project level from the start.

Daewoo E&C shall utilize ALARP system that reduces the risk to a level which is as low as reasonably practicable and involves balancing reduction in risk against the time, difficulty and cost achieving it.

Daewoo will focused in controlling major accident hazards, occupational health hazards & environmental impact by analyzing the risk though measuring the likelihood of occurrence and the potential adverse consequences which may have affect the people, asset, environment and reputation.

Various guidelines on HSEIA are available. The following main steps will be applied;

(1) Preliminary activities include the selection of a consultant that will conduct the HSEIA and the collection of background information. This should be undertaken as soon as a project has been identified. The consultant to be selected should be approved by the COMPANY as per project requirements.

(2) Impact identification involves a broad analysis of the impacts of project activities with a view to identifying those which are worthy of a detailed study.

(3) Baseline study entails the collection of detailed information and data on the condition of the project area prior to the project's implementation.

(4) Impact evaluation should be done whenever possible in quantitative terms and should include the working-out of potential mitigation measures. Impact evaluation cannot proceed until project alternative has been defined, but should be completed early enough to permit decisions to be made in a timely fashion.

(5) Assessment involves combining HSE losses and gains with economic costs and benefits to procedure a complete account to each project alternative. Cost-benefit analysis should include HSE impacts where these can be evaluated in monetary terms.

(6) Documentation is prepared to describe to the work done in the HSEIA. A working document is prepared to provide clearly stated and argued recommendations for immediate action. The working document should contain a list of project alternative with comments on the HSE and economic impacts of each.

(7) Decision-making begins when the working document reaches the decision maker, who will either accept one of the project alternatives, request further study or reject the proposed action altogether.

(8) Post audits are made to determine how close to reality the HSEIA predictions were.

The HSEIA Reports will demonstrate in relation to the subject project, facility, site or activities:

1) That all HSE hazards have been systematically identified in the Hazards & Effects Register, inclusive of relevant risk classification (e.g. High, Medium and Low).

2) That all Significant (adverse) Environmental Impacts have been identified, suitably analyzed and assessed for significance. It must be demonstrated that relevant control, mitigation and recovery measures are proposed (for projects), are implemented (for existing facilities or operations) or an implementation plan exists for implementation.

3) That all Major Accident Hazards have been identified and suitable control, mitigation and recovery measures are proposed (for projects) or are implemented (for existing facilities or operations). It must be demonstrated that operation can be achieved within the quantitative criteria for risk tolerability and ALARP must be demonstrated in accordance with principles that are compatible with those provided in Risk Assessment & Management Procedure.

4) That all High Occupational Health Risks have been systematically identified and suitable action to mitigate these risks and to protect employees from these risks have been or will be taken.

5) That there is an implementation plan that shows how the control, mitigation and recovery measures for Significant Environmental Impacts, Major Accident Hazards and High Occupational Health Risks will be implemented and managed throughout the facility lifecycle.

6) How all HSE risk - including that resulting from Medium and Low Risk Hazards - will be managed and controlled via project specific HSE Management System.

7) That Emergency Response Plans (on-site and off-site where necessary) in relation to Major Accident Hazards have or will be prepared based on credible emergency scenarios, with the necessary stakeholder consultation.