OSD HSE FINGER TIPS

HEALTH SAFETY ENVIRONMENT FINGER TIPS
IN
OIL SOUTH DIRECTORATE

PERSONAL INFORMATION	
OWNER:	
POSITION/REF. IND:	
COMPANY NUMBER:	
DATE OF ISSUE:	
DIRECT LINE SUPERVISOR:	

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A. INTRODUCTION

A1. Purpose

PDO HSE Policy is structured to have a systematic approach to HSE management, designed to ensure compliance with the laws of Oman government and to achieve continuous performance improvement". An essential feature to achieving HSE objectives is training and awareness of the personnel to effect the policy implementation.

The Oil South Directorate makes HSE a number one priority and remains as number one in her daily operations forever. To this end, the "finger tips" on Health, Safety and Environment (HSE) has been developed as a guide to both new and existing staff in Oil South Directorate.

This guide is intended:

- to create general HSE awareness in OSD activities for new members into the team
- as a quick reference manual to existing staff to perform their tasks safely
- provides direction on how and where to obtain relevant HSE information to perform daily tasks.
- provides general knowledge of OSD HSE-MS structure and link to the corporate HSE-MS
- provides awareness of available HSE tools and their applications.

Abstracts are drawn from various existing OSD and PDO documents to cascade the key messages contained in them. This is primarily because many people are known to be scared in reading large volumes of documents.

The booklet is structured according to the 8 elements of PDO HSE MS and address key things we need to know.

References will be made to more detailed documents, which are available on either the Oil South Directorate or the CMS Web-sites.

There is one question that every individual that works with us or for us needs to know the answer to **"WHAT DOES HSE MEAN TO ME?"**

It is your responsibility to make sure you find the answer.

We have a simple 3-prong approach to ensure fulfilment of all our HSE objectives:

LOOK AFTER YOURSELF AND WHAT YOU DO,

LOOK AFTER THE PEOPLE AROUND YOU AND WHAT THEY DO,

LOOK AFTER THE ENVIRONMENT AND THE WORLD YOU LIVE IN.

A2 STAFF INDUCTION

Oil South directorate is a core business unit (oil production) in PDO's business. We need to make sure our staff are well informed and prepared on safe work practices and apply the principles on job routines in order to achieve zero oil deferment due to human error without compromising safety.

An element of this preparation is the HSE induction process: – Each new arrival will be welcomed by key personnel in the department and introduced to the team members. He/she will thereafter be briefed in specific operational areas and key HSE Critical subjects and a copy of this booklet will be issued at the end of the briefing. A copy is this tips is also intended to be issued to all existing OSD Staff and to be easily accessible as quick reference text on the OSD website.

A3 OBJECTIVES OF PDO'S HSE MANGEMENT SYSTEM.

- Manage Hazards and effects to health, Safety and the environment in a structured way
- Management of hazards involves a systematic process of risk identification, assessment, control, recovery
- Performance standards for managing health, safety and environment
- Provide all staff with a concise, comprehensive and structured description of all aspects of PDO's HSE management system
- Process for managing HSE at the corporate level and within the OSD Team
- Communicate PDO's HSE management system to PDO staff in a way that it is interesting and easy to understand.

A4. OVERVIEW OF PDO HSE-MS

There are 8 elements of PDO's HSE Management System:

Each element of the HSE Management System is recognizable by having a distinctive colour and icon. PDO uses the united Football club to analyze how the HSE MS function which makes it very easy to understand

1. Leadership and Commitment

Senior management promotes a strong culture of HSE commitment to the workforce by providing fund, support and safe work place for its employees and Contractors to achieve their HSE targets. The successful implementation of HSE management system within PDO's Staff and Contractors requires visible leadership through every one's commitment to HSE management.

Employees and Contractors are to support the targets set by management

1.1.0 Visibility:

Management demonstrates their leadership to HSE issues (visible management Commitment) by:

- Empowerment to Stop unsafe work
- Putting HSE Matters high on the agenda of meetings
- Make presentations on HSE related issues to Staff and Contractors to convey the message that safety is number 1 priority.
- Recognize achievement… "Shukran"
- Participate in Management inspections, HSE Meetings
- Review of HSE performance against Targets
- Provide resources to develop, operate and maintain the HSE Management System
- Leads in incidents investigations/Reviews (BIRC, MIRC, NIRC and OSD-IRC)

1.1.1 Empowerment to top unsafe work:

All staffs are empowered to stop work which they consider to be unsafe. It is not only your **right** but your **duty** to stop operations, when they are unsafe OR when they become unsafe due to changes in circumstances. It is essential that staff at all levels feel that they can stop the

work without any repercussions, we prefer to stop too often rather than having an accident in our operations.

SAFETY IS YOUR NO.1 PRIORITY

Our Way of Working is:

If it is not safe…
…for you, don't do it!

If it is not safe…
… for your workforce, don't allow it!

If it is not safe…
… for other Staff, tell them!

… and if it is serious, STOP THEM!

STOP THE WORK

1.2. **Proactive in Target Setting:**

- Management leads in development of annual HSE plan.
- Allocate action parties for all HSE plan actions and sets task and targets for them after agreement with employees
- Include relevant HSE plan actions into individuals' tasks and targets

1.3: Informed Involvement:

- Agree on resources to be made available for HSE projects and plan implementation
- By effectively communicating HSE issues you can directly contribute to the health and safety of your team.
- You also assist in protecting the environment that supports the livelihood and health of the people of Oman.
- Providing support to staff and contractors will contribute to the building of an healthy "HSE culture" in PDO.

"If we're going to get HSE right, each one of us needs to lead by good example".

2.0 Policy and Strategic objectives.

HSE Policy: Is the highest level document in PDO's HSE management System.

We design our activities upon PDO's **policy** by striving hard but fair (within the contexts of the regulatory bodies), not to argue with the PDO directors/Oman government's decisions and to maintain a positive team spirit at all times. We have the **strategic objectives** of making profit for PDO and the share holders, and significantly improving the profits at the end

We should understand the responsibilities to staff, contractors, shareholders, and business

Partners and the society at large. These responsibilities cannot be separated, and include a commitment to managing health, safety and environment:

2.1.0: HSE Policy:

- Demonstrates the intent of the organization to comply with the legislative requirements,
- HSE policy is communicated to all employees and contractors
- Senior Contractor Management are informed of OSD HSE objectives and targets and made to understand their own roles in getting their Company to meet the requirements.
- We align the Contractor HSE Policy and strategic objectives with that of PDO
- Commits the organization to reduce the risks and hazards to health, Safety and the environment to levels, which are As low as Reasonably Practicable (ALARP)
- Achieve continuous improvement in HSE performance etc

2.2.1 Strategic Objectives

- Our Business Objectives demonstrate sound HSE and integrity Management
- Targets are developed each year as part of our Strategic objective
- Objectives are set for Key HSE messages. Issues are cascaded to staff and Contractors eg, Competence, compliance, road Safety and Supervision set as major items for monthly HSE meetings.
- Ensure Key HSE messages are produced in easy to read format in Arabic, Hindi and English and cascaded down the line where it is required.

2.3.0 Legal requirements

- Legal requirements are met by:

- Obtaining all necessary HSE licenses, approvals and permits
- Meeting the conditions of the HSE licenses and permits specified by the regulators.
- Ensuring timely renewal of HSE licenses, approvals and permits

❖ Type of Permits PDO need to have from MRMEWR:

- Area Permit (Environmental. Permit)
- New Project Permits
- Sewage Treatment Plants
- Solid Waste Management Facility
- Hazardous Waste Management Facility.
- R.O plants
- Production Water management
- Chemical Handling
- Radioactive sources
- Well Registrations
- Civil Defense permit (from ROP):
- Chemical and Hazardous materials stores.
- Vehicles carrying hazardous chemical/ materials / waste
- Your active participation is essential in making the HSE Management System work.
- Senior management relies on you to influence safe work practices by using the measures they provide to build team work.
- Senior management also relies on you to provide information about whether these measures are effective. In order to meet its business goals,

"How can We be expected to be responsible corporate citizen, if you don't share the same values and act on them?"

3.0 Organization, Responsibilities, Resources, Standards & Documents

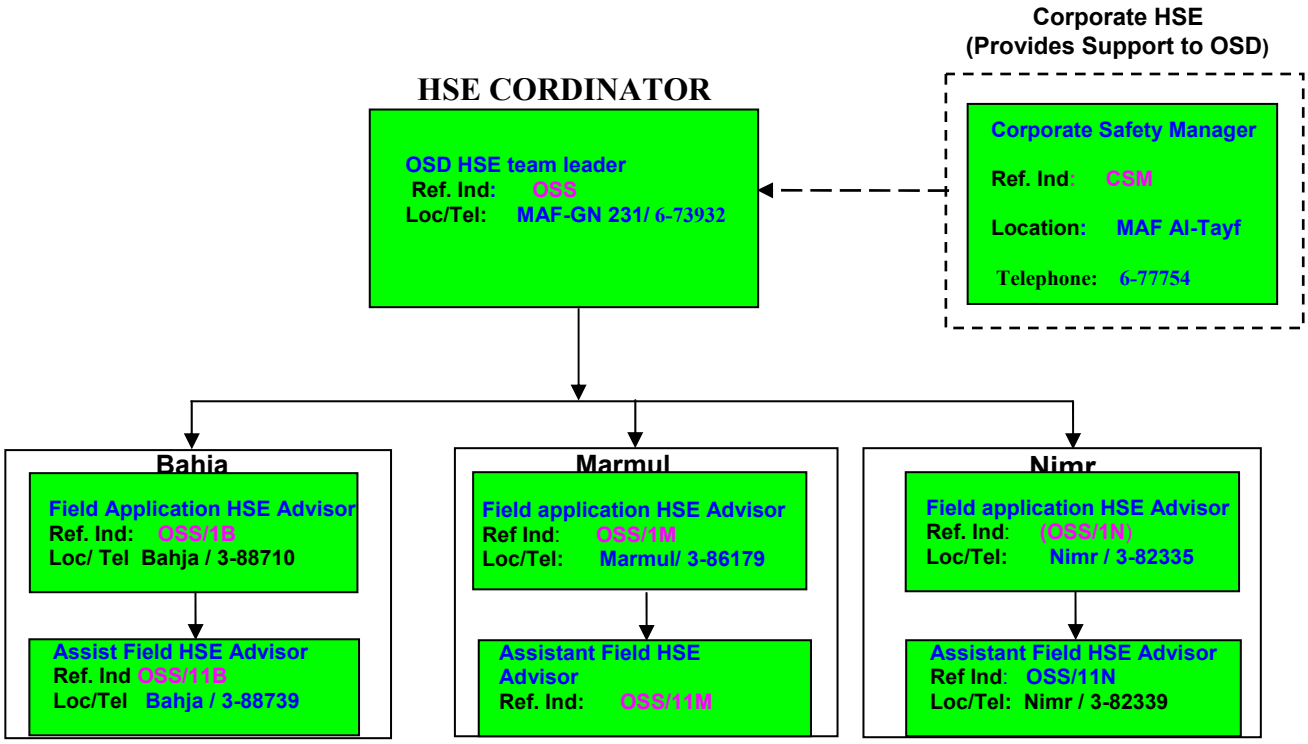
Management ensure PDO HSE –MS structure is understood at all level by both PDO and Contractors workforce responsible for implementing the HSE-MS and in obtaining information by formal process where We, contractors and their workforce, stake holders and other affected Parties can address HSE issues

3.1.0 Organisation and responsibilities:

The South Oman Directorate Organogram is displayed in the OSD web page to be accessible by PDO staff and Contractors.

OSD HSE steering team is structured as shown in the organisation Chart below.

OSD HSE Team Organisation Chart



3.1.1 OVERVIEW OF OSD ASSETS:

A. Bahja
- Sadad/Mukhaizna
- Ghufus/Suwaihat
- Sayyala/Anzauz
- Zauliya/Sayyala
- Hassun/Hazar/Hawqa
- Wafra/Nafoora/Zareef
- Hubara & Sahma Booster stns.

B. Marmul
- Jazal/Al Noor
- Al Burj/Dhiab
- Qaharir
- All fields South
- All fields West
- Harweel

C. Nimr
- Nima/Rima/Nawal
- Amal/Thayfut
- Amin/Karim/Simsim
- Al-Noor

- Corporate HSE (CSM) provides HSE support to OSD:- Standards, specifications, staff HSE training, etc
- Managers are accountable for implementing PDO's HSE Policy within the directorate
- Team Leaders, Contract Holders and Supervisors are responsible for ensuring that activities are carried out in accordance with PDO's HSE Policy
- All PDO and Contractor Staff are accountable for following the instructions of their supervisors in accordance with PDO's HSE Policy and HSE management system
- HSE tasks are included in individual's staff's tasks and targets and appraised annually.

HSE performance plays a prominent role in the annual assessment of Staff and therefore should be given prime attention.

3.2.0 Procedures for Responsibilities

HSE Management Procedures and accountabilities are defined in business control documents relating to HSE Management e.g. HSE plan, Job Descriptions, Task &Targets (see section on documentation).

3.3.0 Resources

- Effective HSE management system require sufficient allocation of human and financial resources
- Human Resources include both PDO Staff and Contractors. Effective HSE management relies on the competence of the people.
- We recruit the right calibre of personnel and make budgetary provision for HSE implementation annually and to meet HSE targets.
- Competence is a function of each individual's awareness, knowledge and skills and is supported by identifying training needs and providing the appropriate training support by management.

3.4.0 Training and Competence

- PDO's requirements for HSE training courses are defined in SP-1157 Specification for HSE Training. We lash on to this specification for the training of her our/Contractor personnel.
- HSE Course Competence Assessment is carried out to determine training requirements for line Supervisors.
- Staff Competence Assessment is conducted to identify the training needs of individual staff to match with the tasks being performed.
- Staffs are trained for areas of deficiencies to close the gaps identified during the competence assessment.
- Training matrix which shows relevant training requirements for each job category as well as courses attendance record are maintained by each section/team leader and updated regularly
- Staffs are required to attend Training courses duly and forward their HSE passports to their respective supervisors to update the training matrix each time a course is attended.
- All staff and Contractor personnel are required to maintain their training records (training passports, etc)

- In addition three modules of HSE Competence Assurance Assessment project propulsion project are developed to enhance HSE advisors' level of proficiency.

3.5.0 Contracting: HSE Management

Not only are you as PDO employee expected to work to the standards of our PDO HSE management System but we expect our Contractors to work to these same standards.

- PR-1171 is the Procedure in place that outlines all HSE requirements and provides a guiding tool for managing HSE in all Contracts.
- The procedure is in two parts and identified as PR-1171 PART I and PR-1171 Part II

Part I :- describes the flow of activities to be executed by Contract Holders, from strategy definition to close-out of a contract, to ensure that Contractors achieve the same (or higher) HSE standards as those required by PDO for its own operations. The Procedure is based on a planned approach with attention being paid to HSE issues in the early Contract Phases in order to properly address HSE through the entire contract process.

- **Mandatory for PDO Personnel involved in Contract Management**

Part II: is referenced, in document GU-140 "C-09 HSE Requirements", to enable Contractors and Contract Holders carry out PDO prescribed HSE activities in the manner and at the level required by PDO. This Information is to be used by both Contract Holders and Contractors, and is also referenced throughout Part I where appropriate.

All personnel involved in managing Contracts are required to make reference to these documents at the various stages of Contract and take required action(s) as applicable

The requirements of this document are mandatory. Non-compliance shall only be authorised by CSM through STEP-OUT approval.

3.5.1 Sub contractors Management:-

We expect our Contractors to coach their Sub-Contractors in line with the provision of PR117. It is their duty to ensure they do work in accordance with these standards and it is our responsibility to check them.

3.6.0 Standards

A standard is weight or measure expected to be met and by which our HSE-MS is judged to ascertain the level of performance. PDO HSE-MS is judged based on the following Standards:

- Oman Laws
- ISO-14001
- EP-95000 Series

For example ISO-14001 is an international standard that represents worldwide agreement on best practice for environmental management.

3.6.1 Performance Standard

A performance standard imposes limits and Targets, such as how much gas can be released into the air or parameters that the qualities of the treated sewage from STP meet e.g. COD, BOD or Potable water shall meet following parameters Ph, chlorine, etc

3.7.0 Documentation:

PDO documentation system is structured as stated below

- HSE policy
- HSE management system Manual
- HSE management Procedures
- HSE Specifications
- HSE Guidelines

The table below shows documents and documentation system applicable to OSD

3.7.1 DOCUMENT HIERACHY

Document Hierarchy	HSE-MS System Manual	Applications to OSD		
Policy	Policy and strategic objectives	• HSE Legislation • Deviation records from EP-95-0100 • HSE Licences/Approvals/ Permits		
Code of Practice		• Job descriptions • Minutes of Committee meetings • Contract Documents • Training plans/matrix • Monthly HSE Reports • Competence assessments / Training Records • Reports to external stake holders		
Procedures	Organisation, Responsibilities , Resources, Standards and Documents	• Hazard and Effects Register • HSE Cases (Bahja, Marmul, Nimr) • EIA Reports • HRA Reports		
Records	Planning and Procedures	• Asset Manager (OSD) Mandate • Energy response document Part III • OSD HSE Plan • Work Permits • Operational control Documents		
	Implementation and monitoring	• Monitoring Data • Non-Compliance Report Forms • Corrective action plans • Incident Reports and Follow-up action Plans		
	Audits	• Audit Reports • Audit Follow-up Action Plans		
	Review	• Minutes of Review meetings		
Specifications	**SP1194:** Chemical Management **SP1157**: HSE Training	**Health**	**Safety**	**Environment**
		SP 1230:- Medical Examination, treatment and facilities **SP 1231**:- occupational health	**SP 1234** PPE **SP1242**: activities in the vicinity of O/head power lines	**SP 1005** Emissions to atmosphere **SP 1006** Aqueous Effluent **SP1007** Accidental

	SP2000 Road Transport **SP 1258** QRA Assessment **SP 1259** STOP	**SP 1232**:- public Health **SP 1233:-** Smoking, drug and Alcohol **SP 1237**:- Ionising Radiation **SP 1170:-** Management of NORM	**SP1075:** Fire and Explosion Risk management **SP1256** Camps, w/s Labs, Offices and industrial Safety SP 1257: working at heights, Scaffolding and Earth works	release to land and water SP1008 Use of Energy, materials and Resources SP 1009 Waste Management **SP1010** Env. noise and vibration SP1011 Flora and Fauna SP1012 Land management
Guidelines	GU 230: FERM facility Guideline GU288 Emergency Response Part IV Guideline GU441 HSE Inspections Guideline	**Health**	**Safety**	**Environment**
			GU 273 PTW and Job Safety Plan	**GU 195** Environmental Assessment

3.7.2 OSD Specific Specific documentation

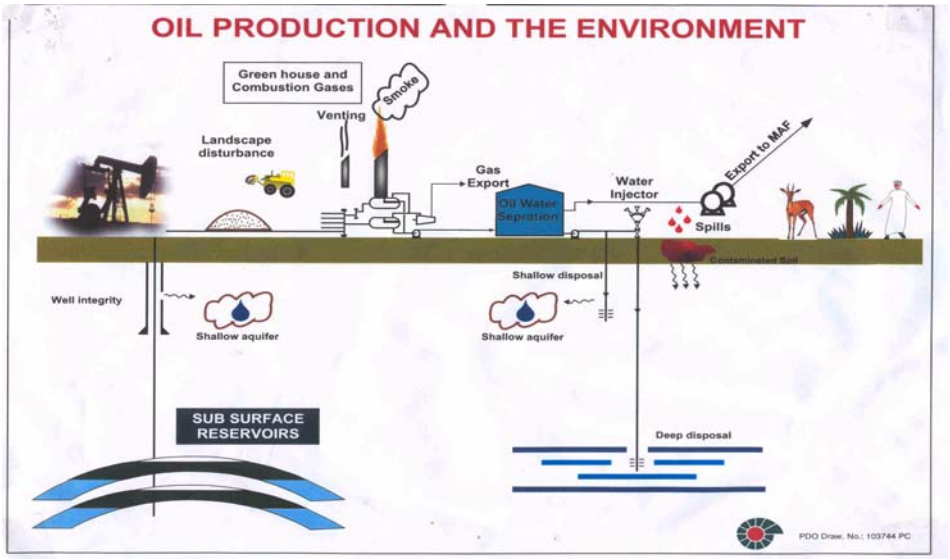
The Oil South Directorate follows the principles of HSE documentation System. It is available on the OSD COMMON Web-site.

3.8.0 Communication

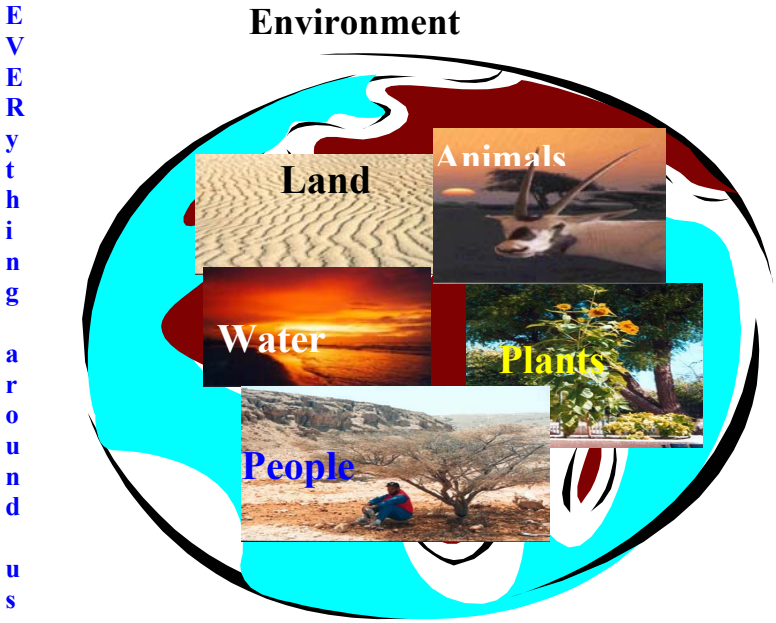
- Internal Stakeholders (PDO and Contractor staff)
- External Stakeholders (shareholders, regulatory authorities, public, media, customers, suppliers, Bankers and financiers, insurers).

4.0 HEMP (Hazard and Effects Management Process)

In course of our oil exploration and Production, elements of our activities, products or Services (Aspects) interacts with the natural environment (Impacts), which results in the change "positively or adversely" of the environmental conditions (including humans, flora and fauna

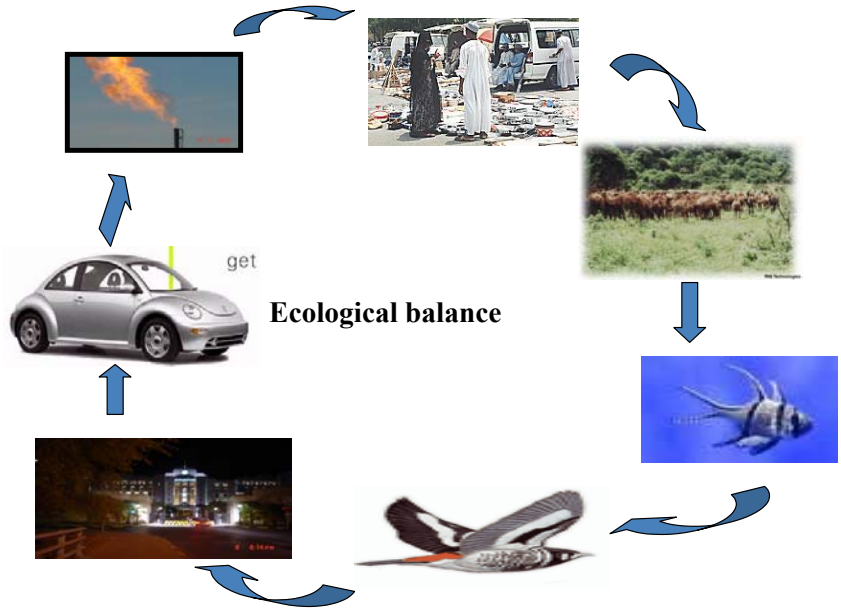


The sources of these hazards associated with our activities with a potential to cause harm or an undesirable event and consequence are identified, assessed eliminated or controlled to As Low As Reasonably Practicable (ALARP) and recovery measures put in place to mitigate the effect if the worst happens



Why is environment important to us?

Our survival or in fact our very **existence** depends on the environment.



HEMP (HAZARDS AND EFFECTS MANAGEMENT PROCESS) is the process by which workplace hazards are IDENTIFIED, ASSESSED, CONTROLLED and RECOVERY measures identified and put in place to reduce the effect on the people, Environment, Asset and Reputation in case all the Checks that have been put in place fails and the hazard is released.
HEMP: Is the heart of the HSE management system. Failure of the HEMP leads to complete failure of the HSE-MS.

4.1.0 Management of Hazards and their Effects (HEMP)

HSE RISK MANAGEMENT

RISK	=	LIKELIHOOD or PROBABILITY OF HARM	x	CONSEQUENCE SEVERITY

- **Hazard** (Aspect): The potential to harm to people, and the environment, cause damage or loss of assets, and to adversely impact PDO's reputation e.g. H2S leak, Major oil leak from MOL

- **Effect** (Impact): An adverse impact on people, the environment or PDO's reputation or loss of assets

RISK: The frequency of occurrence (likelihood) of an undesired event, and the severity of consequences
(Effects) of that event

SOME ACTIVITIES/PRODUCT OF OSD THAT AFFECTS THE ENVIRONMENT

Beam Pump Operation

Gas flaring

Waste oil Storage

Gathering Station drilling water disposal

Civil construction.

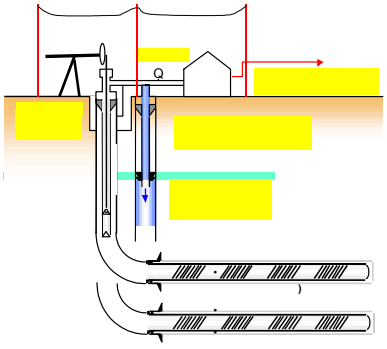
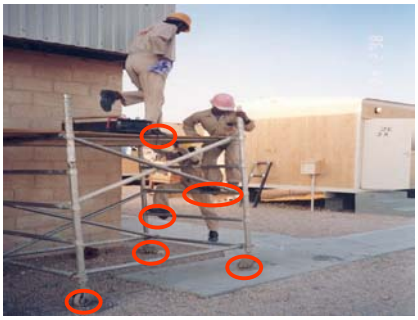
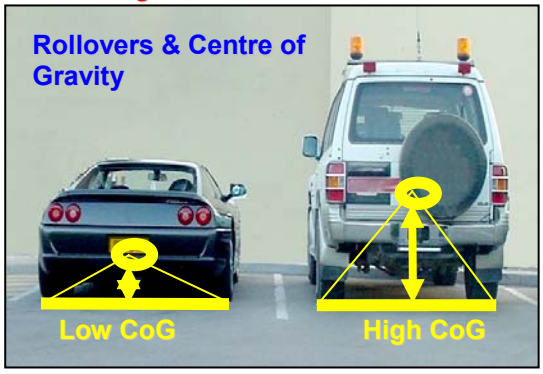
Chemical handling

Tanker loading.

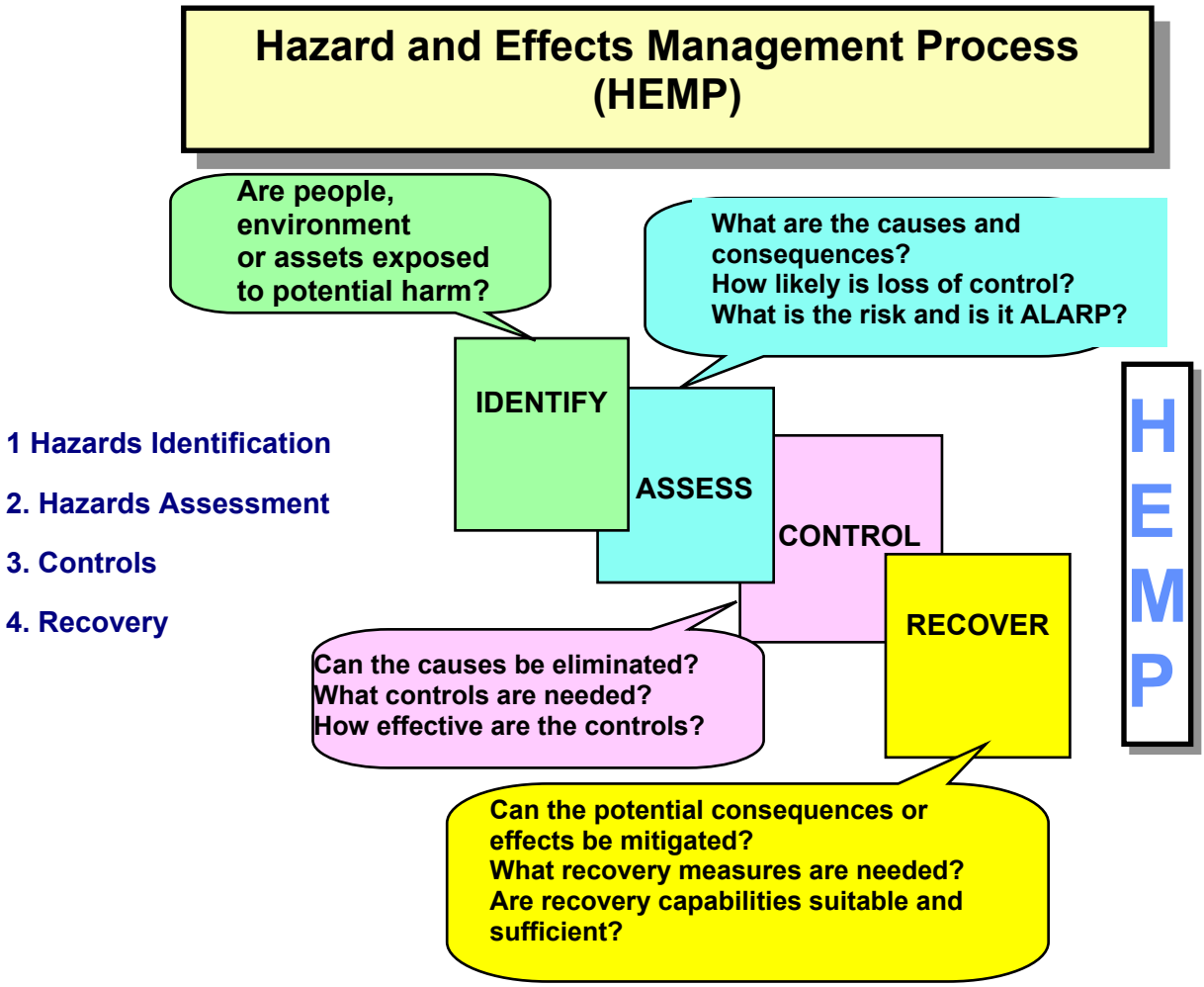
Waste disposal

Identify the Aspects (hazards), Impacts and Controls

4.1.1 What are the Hazards, Effects and Controls in OSD Operations?

Hazard/Aspects	Likely Top event	Consequence	Controls
 **Crude under pressure:** - Flow lines - On-Plot	Loss of Containment	- Un-ignited spillage - Spill with Subsequent Ignition. -Injuries and fatalities	- Pipeline - Materials selection - Pipeline maintenance - Staff training -Trips and alarms - Wellhead Pressure control -Chemical injection - Cathodic Protection, etc
 **Hydrocarbon in formation** Typical OSD Well arrangement	Loss of Well Control/Blow-out	- Un-ignited spillage - Spill with Subsequent Ignition. -Injuries and fatalities	- Well testing/maintenance - Inspection of associated Equipment - Maintenance of lifting devices and equipment - Permit to work system - Competent and trained personnel, etc
 **Personnel working at Height**	Falling from height	Falling from height resulting in injury or fatality	- PTW-system application - Scaffolding specification - Procedures -Proper Supervision - Staff training -Tool box talks, etc
Would you drive these cars in the same manner when taking a corner or bend? Of course NOT!  **Driving on the highway/Interior**	Accident	- Injury to personnel/ fatality - Vehicle damage -Cargo damage, etc	- Drivers certification (DDC)/re-certification - Journey management system - Road safety monitoring

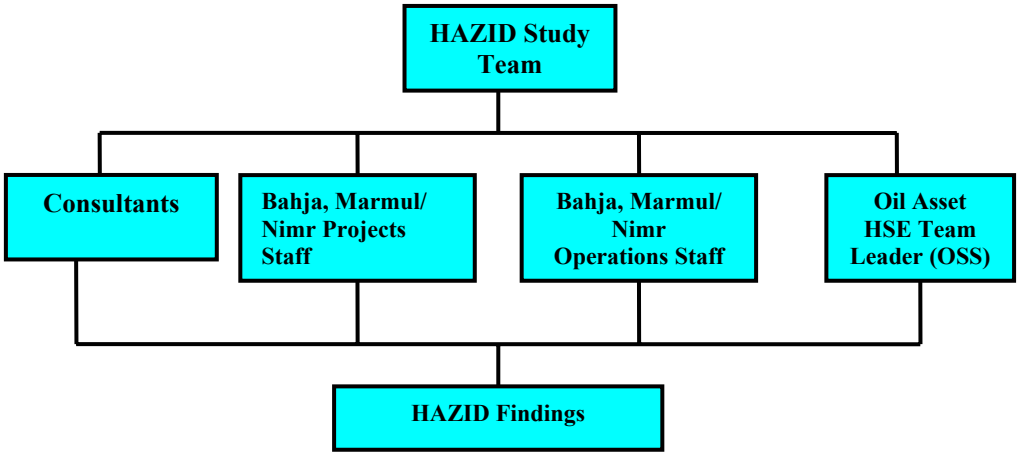
Hazards associated with our activities in the three distinct areas of Bahja, Marmul and Nimr have been identified and controls established through the four stages of HEMP process so that the Risks are managed at levels of ALARP.



4.1.2 Stage 1: Hazards Identification

- By conducting several HAZID (HAZards IDentification) workshops comprising the team as shown.
- Workforce participants were drawn from wide range of disciplines for each Area including Contractors
- Consultants conducted and facilitated workforce active involvement.
- Results of the HAZID workshops formed integral part of the Areas HSE-CASES. HAZID information list developed during workshops were further supplemented by information developed as a result of the Consultant's experience in HSE Case development and preparation for assets operating under similar conditions.

HAZID TEAM



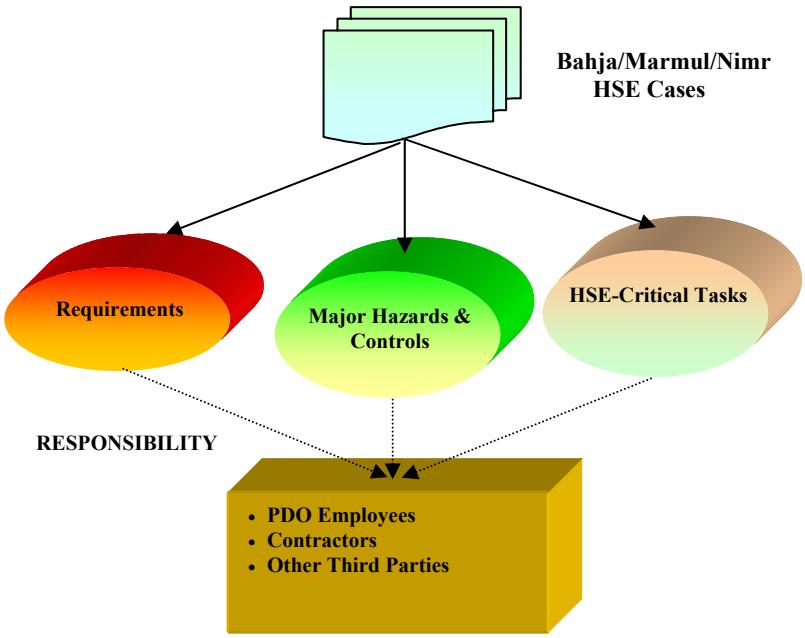
4.1.3 Stage 2: Hazards Assessment:

- The consequences of the release of a hazard are **not** acceptable to OSD.

"The thing to remember with the type of work we do in OSD is that several things can go Wrong, and when they do, there is a potential for People to get seriously injured, damage to Assets, Environment and reputation or worse"

- Make sure you are able to recognize activities that may be dangerous or hazardous.
- Before you allow work to start, make sure that you think about how it may impact on health, safety and the environment and prevent it from happening.

Major Hazards associated with OSD Operation which is addressed in the HSE Cases of Bahja. Marmul and Nimr.



4.1.4 List of Some Major Hazards likely to be encountered in carrying out our activities.

- Release of oil or condensate from a pipeline, flow line or on plot pipe-work
- Release of oil or condensate from surge or storage tank
- Release of LPG from piping, station vessels
- Release of hydrocarbon gas (at gathering station, pipelines)
- Release of petrol, diesel during tanker loading
- Disposal of production water
- Disposal of solid and liquid wastes
- Flaring of associated gas
- H2S gas release
- Exposure to high noise levels
- Loss of Well control, resulting in blow out
- Road Traffic accidents
- Fire in camp
- Large scale food poisoning
- Air craft accident

PDO CORPORATE RISK MATRIX

CONSEQUENCE					INCREASING LIKELIHOOD				
					A	B	C	D	E
Severity	People (P)	Assets (A)	Environment (E)	Reputation (R)	Never heard of in E&P industry	Heard of in E&P industry	Incident has occurred in PDO	Happens several times per year in PDO	Happens several times per year in a location
0	No Health Effect/Injury	No Damage	No Effect	No Impact					
1	Slight Health Effect/Injury	Slight Damage	Slight Effect	Slight Impact		LOW 'C' RISK			
2	Minor Health Effect/Injury	Minor Effect	Minor Effect	Limited Impact					
3	Major Health Effect/Injury	Localised Damage	Localised Effect	Considerable Impact			MEDIUM	'B' RISK	
4	PTD* or 1 Fatality	Major Damage	Major Effect	National Impact					
5	Multiple Fatalities	Extensive Damage	Massive Effect	International Impact				HIGH	'A' RISK

RED Hazards with an associated risk in this region are considered to be 'High Risk' and subjected to extensive additional analysis (Bow Tie) to demonstrate that hazards are being sufficiently protected by barriers and controls.

YELLOW Hazards with an associated risk in this region are considered to be 'Medium Risk' and subjected to additional analysis (BOW Tie) to demonstrate that they are being managed and controlled to a level which is ALARP.

BLUE: Hazards with an associated risk in the region, with the notable exception of A5, are considered to be 'Low Risk' hazards and are not subjected to any additional analysis. They are considered to be adequately managed by the HSE-MS.

The risk classifications from the HAZID Workshops are contained in **Key Operational Document B**

4.1.5: Stage 3 Controls:

What Controls are in Place at Bahja, Marmul and Nimr Facilities to Reduce and/or Mitigate Risk?

- Controls to prevent a Threat releasing a hazard and resulting in a Top Event occurring, i.e. Barriers.
- Detailed list of the controls identified for the Areas assets are provided in **Key Operational Document B** in Bahja, Marmul and Nimr HSE CASES.
- Reference should therefore be made to the Key operational documents which contain all the details as a guide to safe operation of our facilities/carry out our daily activities from the Area HSE Cases as applicable.

THESIS: (The Health, Environment, Safety, Information System) is an 'on-line' relational database used to develop the Bow-Ties and generate tables depicting the relationship between threats, barriers, Critical Tasks, etc. It is fundamental to the Hazard and Effects Management Process (HEMP) and can be accessed electronically. (See EP 95-0323 –THESIS)

The examples given below gives a clearer picture on the subject

Hazard ID	Hazard Description	Threat	Control
H.01.01	Crude Oil under pressure	Pipe/flow line corrosion/erosion	- chemical injection - cathodic protection - sand sucker equipment - Pipe/Flow line maintenance - Flow/pipeline inspection - good material selection - replacement programme - corrosion allowance in pipe work
H.01.01	Crude Oil under pressure	Over-pressurisation	- alarms and trips - wellhead pressure control

			- Staff training
H.01.01	Crude Oil under pressure	Human error	- STOP card System - PTW system - Supervision - Job specific procedures - Toolbox talk

NB:

- *Select the hazard associated with the activity from the Key operational document B1 and C of the HSE case Refer to the hazard associated with the activity and the controls*

Some effective controls we have in place to prevent the hazard from being released are as follows

- **PTW system**

Why permit to work?

A permit to work is a formal, signed, document used to control work involving risks to ensure that the work can be done with minimum risks to health, safety and environment. Two types of permits are in use Class "A" & "B"

When is it required?

Required for high and medium risks activities

Class A Permit (Red-edged colour permit)

- Used for high risk jobs

a) Fire Risks
b) Risks of Explosion
c) Risks for Loss of Life

They require

a) 72 hours notice prior to commencement of job except essential unplanned jobs
b) A job safety plan to be completed and attached to the permit
c) Worksite examination by the responsible supervisor and permit applicant.
d) Daily validation by the Area Authority
e) Tracking in the work tracking system

Class B Permit (Blue edged colour permit)

- Used for medium Risk jobs

a) 24 hours notice prior to commencement of job except essential unplanned jobs
b) A job safety plan to be completed and attached to the permit
c) For work inside a process facility, a worksite examination by the responsible supervisor and permit applicant on the first day.
d) Daily validation by the Area Authority
e) Tracking in the work tracking system

Areas where permits are applied

Process Area: The area within the boundary fence of any hydrocarbon processing facility, including gathering and pumping stations, terminals, other fenced hydrocarbon storage or processing areas.

Hydrocarbon Area: Areas outside the boundaries of process facilities where hydrocarbons are or have been present, including Areas outside process Facilities but within 50m of the boundary fence.

Areas within 50m of a well site or exposed section of the flow line/pipeline which is flanged

Area within 100m of a drilling rig for work by non0drilling personnel

Non-Hydrocarbon areas:-
Areas where hydrocarbons are never present, including Areas outside process facilities, and hydrocarbon Areas, Work by electrical personnel in electrical power distribution systems, administration, recreation or accommodation buildings, work in laboratories and medical facilities

- STOP Programme for PDO and Contractors; training of personnel/STOP

STOP OBSERVATION PROGRAMME (or equivalent)
OSD applies the Dupont STOP system or any equivalent safety observation program. The STOP training is a combination of Self-study, videos, group discussions and on-site observation.

The STOP cycle:

- **REACTION OF PEOPLE**
- **PERSONAL PROTECTIVE EQUIPMENT**
- **POSITION OF PEOPLE (injury causes)**
- **TOOLS AND EQUIPMENT**
- **PROCEDURES**

This program aims to establish changes to staff's behaviour by consciously observing other staff at work while looking for unsafe acts and/or unsafe conditions. A 'no blame' culture is

essential to the success of the program. Rather than pointing out what is 'wrong' the emphasis should be on what 'can be improved'.

DECIDE: Make Safety your top priority
STOP: Give your full attention to the work area
OBSERVE: Look for unsafe acts and unsafe conditions
Think: Consider how safety will be affected by what you have observed
ACT: Apply good judgement to eliminate unsafe acts and unsafe conditions

Safety Awareness is:
- being alert to what you are doing and what is going on around you
- part of every employee's job
- something you learn

Use self-observation and your "mind's eye" to:
- think about how you have done the job in the past
- think about how you are doing or planning to do the job now
- compare these two thoughts with how the job should be done safely

Use Total Observation and your senses to look at everything that is taking place around you

Look Above, Below, Behind and Inside- ABBI

Listen for unusual sound; Smell for unusual odour; Feel for unusual temperature and vibrations.

Use a Questioning Attitude to ask:
- what unexpected things might happen during the job?
- what injuries could occur if the unexpected happens?
- how can this job be done more safely?

STOP OBSERVATION CHECKLIST
In order to eliminate Unsafe Acts/Unsafe Conditions the following should be assessed/ controlled before starting and when doing a job in order to prevent injuries.

Procedures and Housekeeping
Are they
- Available?
- Adequate?
- known and understood?
- followed?

Tools and Equipment
Are they-
- Right for the job?
- used correctly?

Personal Protective Equipment
Use the Head to Toe Check
- Head protected?
- Eyes and face protected?
- Ears protected?
- Breathing protection
- Arms and hands protected?
- body protected?
- legs and feet protected?

Position of People
Injury causes
- hit by/against something?
- caught between objects
- Falling/trips/slips
- High/low temperatures
- electric shock
- Breathing hazardous substance
- repeating movements
- Poor/awkward/static positions

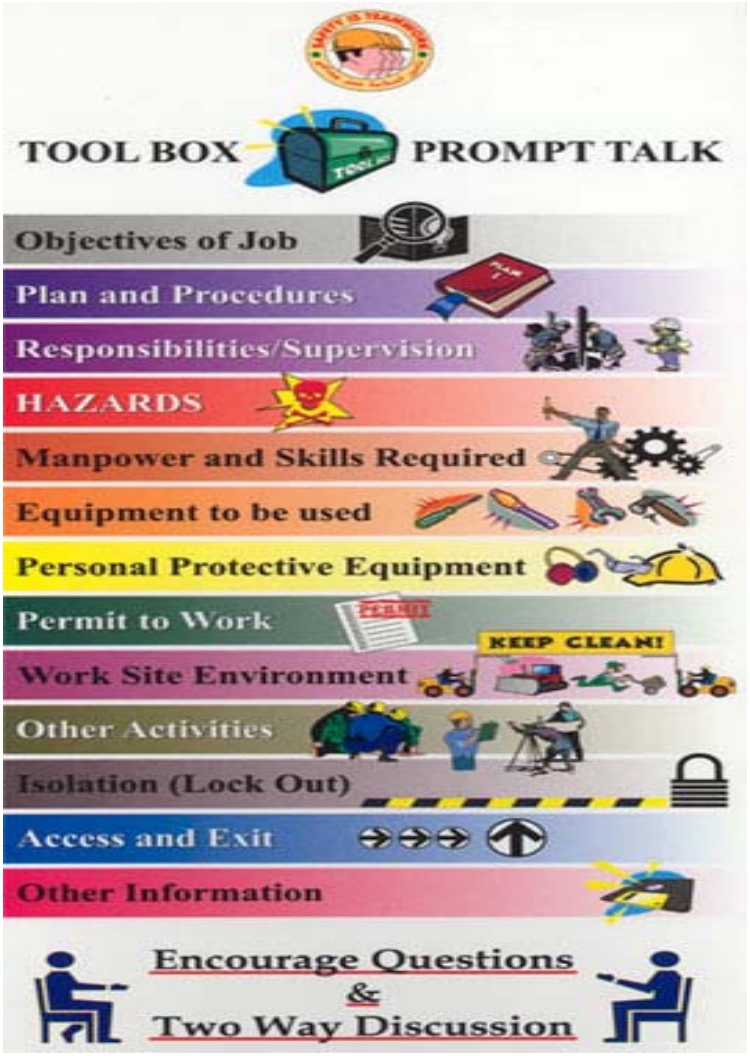
Tool-Box Talks

At the start of each day the Supervisor should lead and encourage an Individual to give a Tool Box Talk

Topics:

- **Work**
- **Hazard**
- **Controls**

Toolbox Talks (TBT) are pre-job operational discussions with all staff who will be involved in a particular job. They are an essential part of ensuring our work is correctly planned, and carried out effectively and safely. A good TBT is a 'discussion' not a monologue given by the Supervisor.



- **Zero LTI club/ESS:**

These have been established to enhance work place hazard management and leadership skills to reinforce responsibilities of safety supervision: This focus on

- Compliance
- Competence
- Road Safety
- Supervision

Supervisors and Safety

Effective Supervision Means:

- Being Pro-Active (up-front planning)
- Following Procedures: Compliance/Competence
- Understanding the Task and the Associated Hazards
- Effectively Communicating Hazards & Controls
- Keeping Others Informed
- Spotting Potential Danger and Acting on it (STOP WORK)
- Understanding the Limitations of the Team: Competence

Journey management System:

Safe Journey Management

What? A system for SAFE JOURNEYS

Why? To enable emergency response (man lost)

When? All journeys except journeys within towns, OR SHORT

How? Safe Journey Manager completes Journey Plan, gives copy to

Driver rings Safe Journey Manager on reaching destination

ROAD TRANSPORT SAFETY:

Road safety needs no introduction. It is by far the biggest single cause of deaths in our operation. We operate with strict specifications and extensive training for all drivers.

10 golden rules for the driver!

Driver's personal decision - I shall complete my journey safely!

- No Alcohol
- Check vehicle for roadworthiness before driving
- Always Wear Seat and Ensure all passengers have worn the Seat belts too
- Do not over-speed and Drive at a safe speed by following traffic rules
- Follow the dust code
- Keep safe distances: 2-second rule!
- Follow Journey Management
- Drive defensively
- Show courtesy and consideration
- If you feel tired pull off the road, take adequate rest and then start journey again.

- Waste Management

All wastes are required to be handled and disposed of in a responsible manner to minimise the impact on the environment. The requirements for the management of waste are set out in the *Corporate HSE Specification for Waste Management (SP-1009).*

To ensure that there is limited impact on the environment we must manage the sewage effluent generated from the operating units and associated camps

The requirement for managing sewage effluent is set out in corporate specifications and those specific requirements for managing sewage effluent within OSD operations are identified in the *Specification – Environmental Management (SP-1225)*.

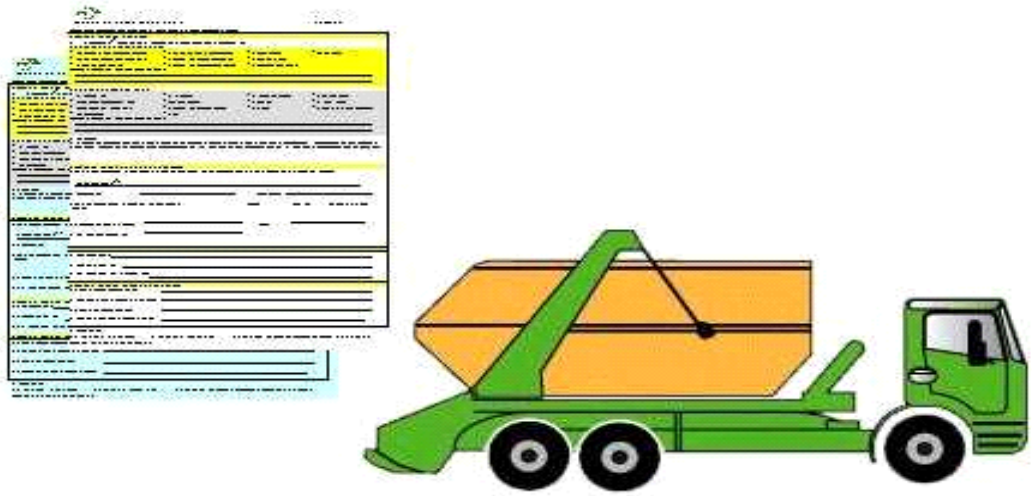
A waste consignment note (WCN) is the way we show evidence that we are managing our waste in a responsible manner.

Non-Hazardous Wastes

- Domestic Waste.
- Kitchens refuse.
- Non-hazardous waste chemicals.
- Non-hazardous empty drums.
- Office Waste.
- Scrap metal.
- Water based drilling mud cutting (WBMC)
- Tree / grass cuttings.
- Water based drilling mud (WBM)
- Others.

Hazardous Wastes

- **Oily Sand / soil.**
- **Oily Sludge.**
- **Waste Lubricants.**
- **Hazardous Waste chemicals.**
- **Hazardous Lab Waste Chemicals**
- **Sewage Sludge**
- **Hazardous empty drums.**
- **Batteries.**
- **OBM & OBM cutting.**
- **Tyres**
- **Pigging waste**
- **NORM**



Note: ***Dumping sewage effluent into open sewage lagoons is no longer acceptable.***

Waste Consignment Note

- All waste will ONLY be accepted into the WMC, if accompanied by a Waste Consignment Note (WCN)
- **Yellow copy : Originator.**
- **Blue copy : Disposal Site.**

: Waste Contractor return to Originator.

- **SHOC cards**

CHEMICAL MANAGEMENT

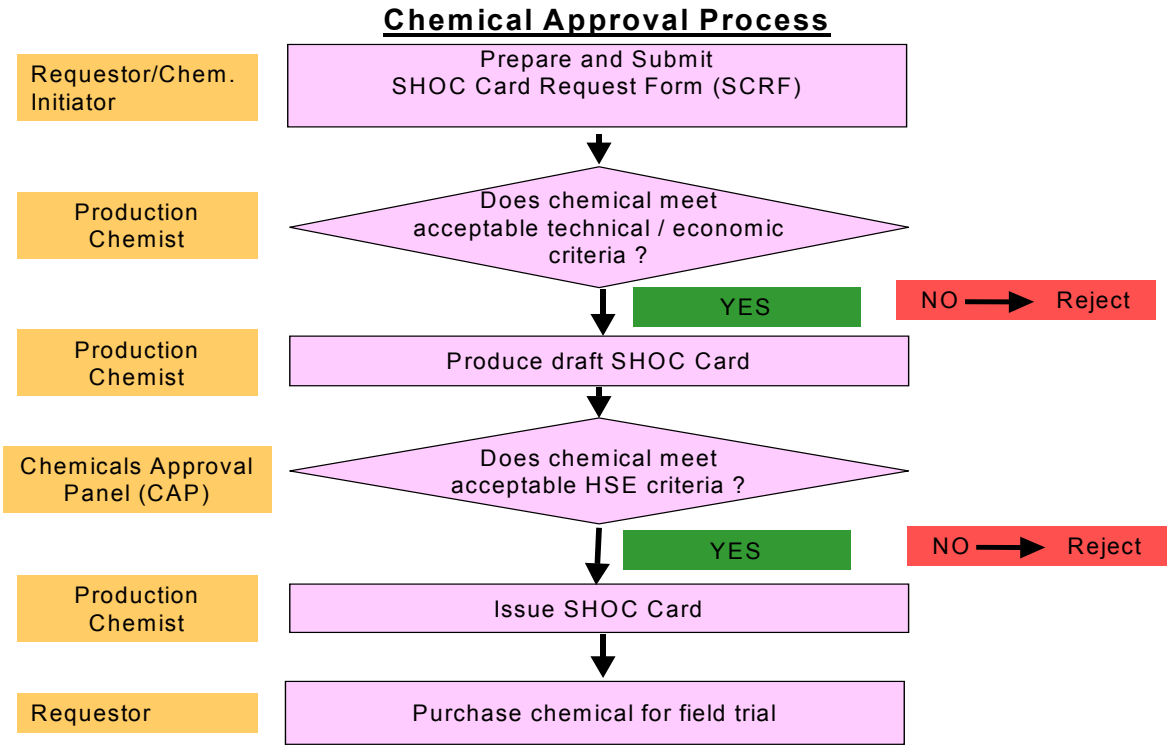
Within PDO the use of chemicals is managed by the SHOC (Safe Handling of Chemicals) system. This provides:

An approval procedure – only chemicals that are approved for use are provided with a SHOC card

- A card (SHOC card) which details the hazards associated with the chemical, storage requirements together with identifying what to do in the event of a spill.

The management of chemicals is identified in the *Chemical Management Guideline GU-292.*

SHOC cards are available on the PDO web and are also available on CD for those units without web access.



Chemicals for which permits are required

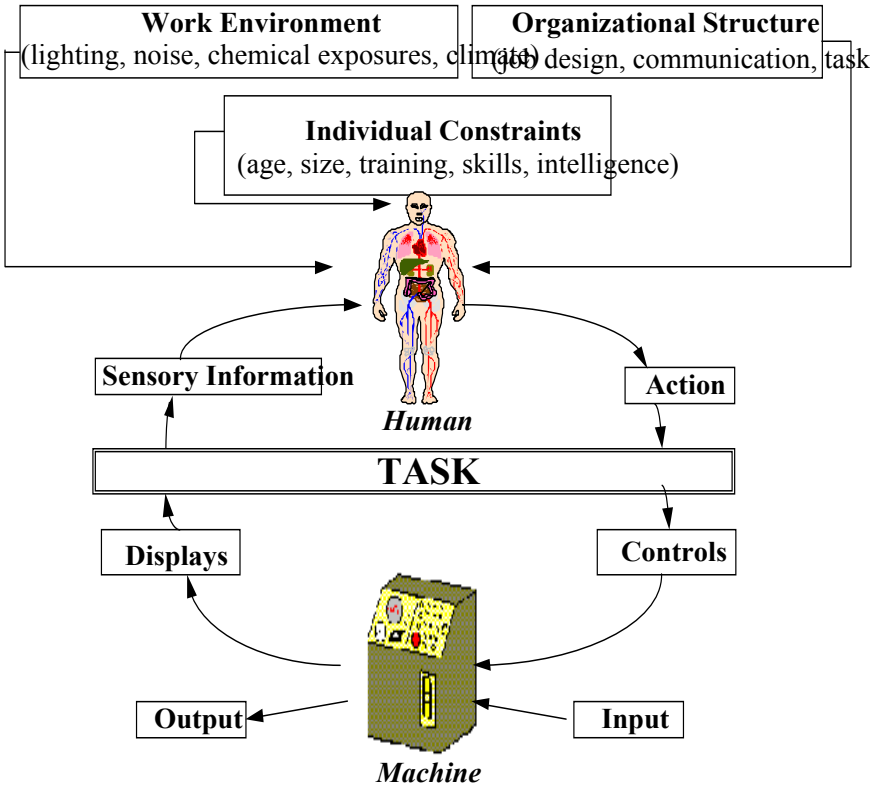
- Around 672 Chemicals
- Chemicals Dept/Web
- Usage is specified
  - Prohibited
  - Restricted
  - Type of use

HEALTH

It is important to recognise the effects of both the way you work and the Environment in which you work on your health.

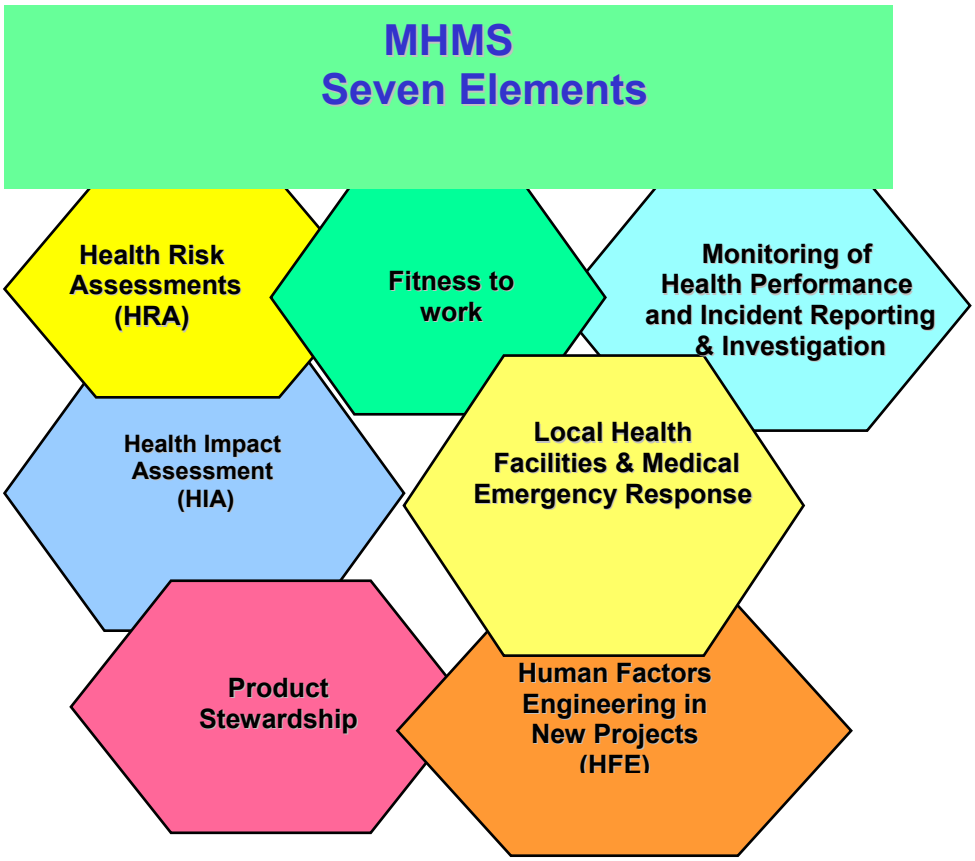
Our "Wellness" is something we often take for granted and yet we have a great role to play in maintaining both a high level of physical and mental wellbeing.

Model of Human - Machine System



Do Exercise for physical fitness

Attend Periodic medical checks promptly



Control of Hazards and Effects

- Hierarchy of Control

- Eliminate:- (Eliminate the hazard)
- Substitute:- (Replace the substance, machine or tasks
- Engineering:- (modify tools or equipment, enclose equipment)
- Administration:- (Develop and implement safe procedure/training

- PPE (Personal protect Equipment are important but should be a last resort) you apply HEMP every time you think about how your work activities and those of your team members may impact on health, safety and the environment.

- Your active participation is essential in making the HSE Management System work.
- Senior management relies on you to influence safe work practices by using the measures they provide to build team work.
- Senior management also relies on you to provide information about whether these measures are effective.
- A strong team spirit will help ensure the safety of you and your team, and will also help to get the job done.

"The main thing I need to remember is that I'm responsible for making sure that the work of my Team is carried out according to the HSE management system"

4.1.6 Stage 4: Recovery: (Refer to Key Operational Document C from the applicable Area HSE Case

Controls are to mitigate against or recover from a particular consequence, i.e. Recovery Preparedness/measures.

HOW TO RECOVER:- Emergency Response

- Understanding of the Procedure (Staff/Contractors)
- Emergency Drill Exercises.

EMERGENCY PROCEDURES

PDO's Emergency Policy lists, in order, the following priorities in event of an emergency:-

1. Safe-guard Life (assist 3rd party where possible) - People
2. Protect the Environment. - Environment
3. Protect the Company/Third Party assets. - Asset
4. Maintain the Company image and reputation. - Reputation

Call-Out

If you notice or involved in an emergency situation, call should be made for emergency response in the following order:

	WHERE AND NO. TO CALL	
Call point	**Area CCRO**	**MAF ETO**
Interior PDO 38 Net	**5555**	**67-5555**
Coastal PDO 67 Net & V-Sat Link	**38-5555**	**5555**
Non-PDO Networks (GSM/ GTO Lines/Thuraya)	**N/A**	**67-5555 (from Interior) or 67-5555 (from Coast)**

CCRO: Central Control Operator
ETO: Emergency Telephone operator
LEBC: Local Emergency Base Controller
LEBC: Local Emergency Control Centre

Give the following information during the call out:

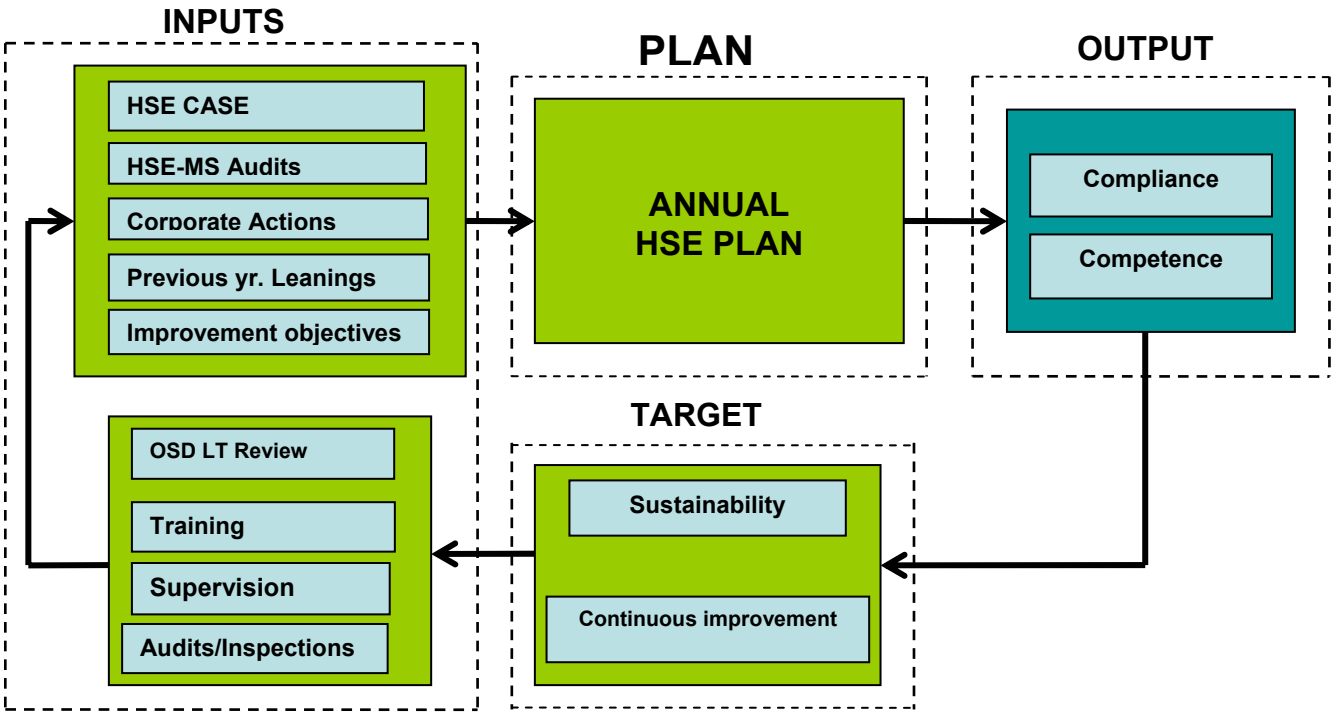
- who you are? (give your names)
- describe where you are? (position)
- where you are in (exact location)
- state your contact number
- state your emergency
- state if medical support is required
- state if fire support is required

All Operational decisions taken during an Emergency should be made in line with the above priorities. At no point should any action be taken that could endanger personnel.

5.0 Planning and procedures

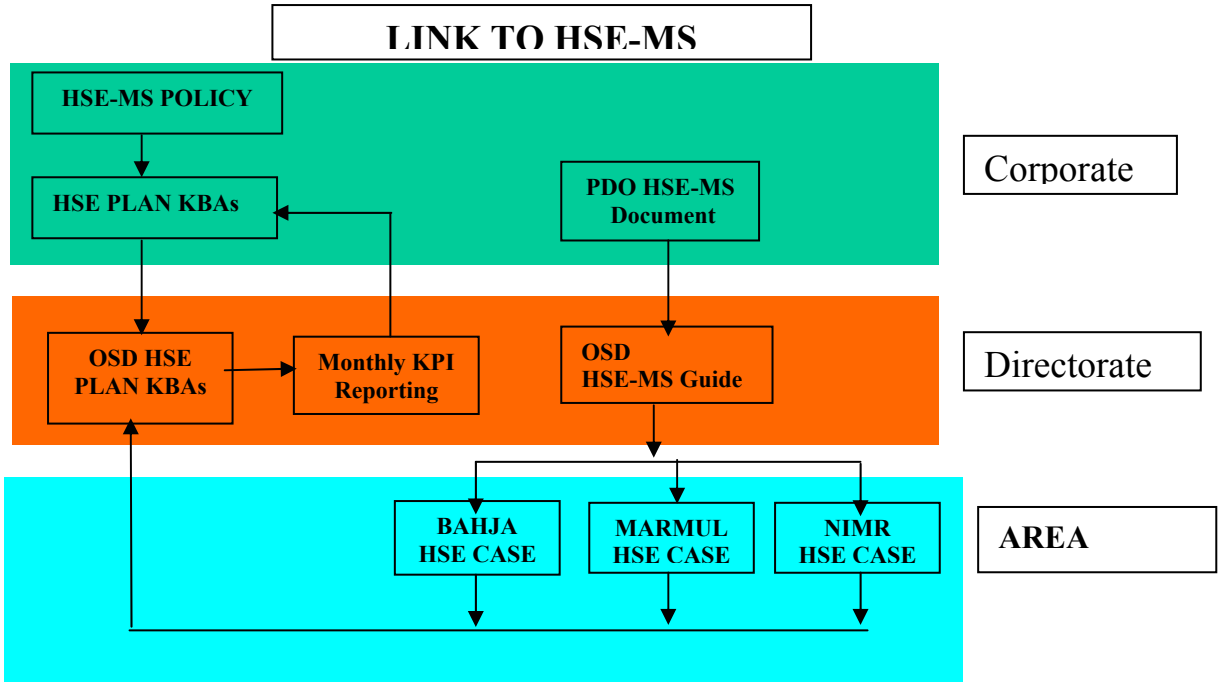
Planning: is the process by which corporate objectives are agreed and then converted into plans for action.

OSD HSE PLAN FLOW-CHART



HSE PLAN

OSD HSE plan is compiled and distributed every year. It is based on our targets and objectives we aim to achieve for the year ahead.



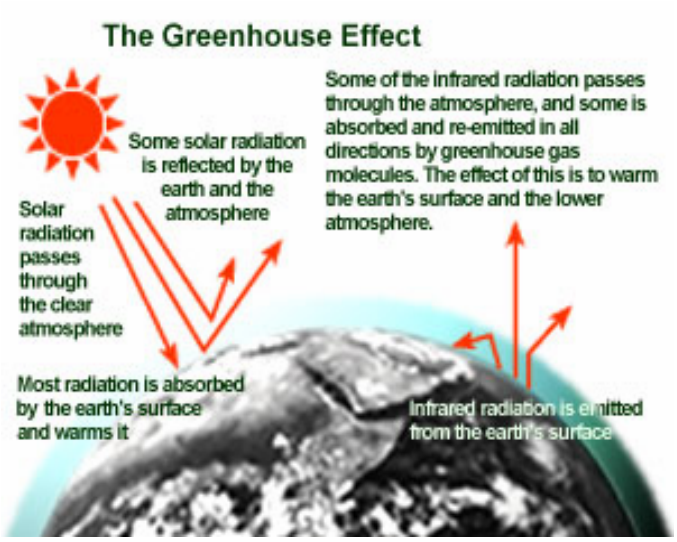
5.1.0 Activity planning

- Defines what needs to be done, whom to do it and when it will be done eg. Business control procedure (vol. 1-vol. 2), PTW manual, Service Level Agreement etc
- Managing HSE risk and improving HSE performance requires thorough planning.
- Effective control of operations is achieved through workplace procedures that address maintaining the safe operation of equipment you work with, managing any changes safely, and through appropriate supervision and inspection.

"There are fewer problems when you plan work before it begins"

- Effective planning will ensure that you know 'where you want to go' (setting objectives and targets), and 'how you will get there' (putting a plan in place).
- Planning also enables a quick and effective response should an unplanned incident occur.

Global Warming

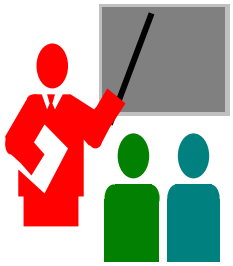


Global Environmental Issues

Global Warming
Ozone Depletion
Acid Rain
Deforestation
Desertification

What is my Role in the planning process?

- Be aware
  - Know what ISO/EMS means
  - Know your procedures. IOS, Plant operating manuals
  - Check work areas prior to activities
  - Spot and prevent hazards
  - Communicate tasks (toolbox meetings)
  - Know your HSE responsibilities



Know your HSE responsibilities

- Be proactive
  - Plan ahead of events
  - Prevent incidents/accidents
  - Always check the hazards
  - Put Controls in place
  - Take all necessary precautions

Plan Ahead

- Use self-observation and your "mind's eye" to:

- think about how you have done the job in the past
- think about how you are doing or planning to do the job now
- compare these two thoughts with how the job should be done safely

- **Use Total Observation and your senses to look at everything that is taking place around you**

Look Above, Below, Behind and Inside- ABBI

Listen for unusual sound; Smell for unusual odour; Feel for unusual temperature and vibrations.

Use a Questioning Attitude to ask:
- what unexpected things might happen during the job?
- what injuries could occur if the unexpected happens?
- how can this job be done more safely?

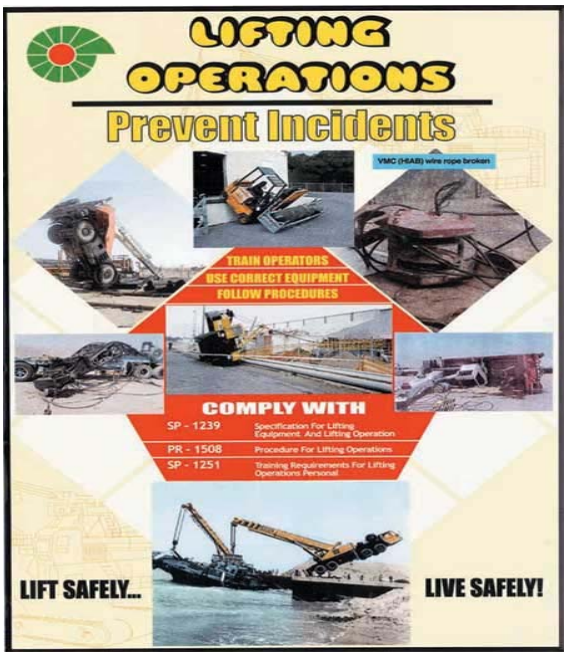
- Know your Operational Controls

- Take all necessary precautions
- IOS (integrated operational standards
- Plant operating manuals
- SHOC cards
- Waste management procedures. Plan for waste handling in JHA
- Your Area emergency response plans and procedures
- Your Area emergency response drills

6.0 Implementation and Monitoring

6.1.0 Implementation:
Activities that are vital to ensure asset integrity prevent incidents and/or mitigate adverse effects.
Selected performance and tracking indicators are set up, and monthly progress reports are presented in monthly OSD HSE implementation review meetings:

- Monitor and report non compliance (monitoring)
- Corrective actions (review non compliances and investigate causes, failures in mgt system.



What is my Role?

- Be in control
  - Follow your IOS (integrated operations manuals)
  - Follow MJRs
  - Control access to our facilities
  - Follow procedures
  - Use the PTW
  - Use SHOC cards for all chemicals
  - Prevent spills
  - Optimize process
  - Report near misses
  - Be prepared for emergencies
  - Conduct drills/discussions as per area Drill plan and keep records
  - STOP unsafe jobs
  - Maintain HSE performance records
  - Conduct toolbox meeting prior to commencement of activities

SAFETY

- Report all near miss & injuries
- Use correct PPE while working
- Don't climb unsecured ladder
- If unsure about the job, ask don't assume

- Use proper tools for the job
- Hold the handrail on stairs
- Keep worksites clean, tidy and free from obstruction free

- Be responsible
  - Don't litter (manage waste properly)
  - Handle oils properly
  - Teach others what you know
  - Work as a team for common goal
  - Observe people working (STOP)
  - Get set Observe people working (STOP)
  - Drive safely
  - Attend periodic Medical tests as required
  - Attend HSE training courses as required
  - Treat company's business as your would take care of your own business or better than yours

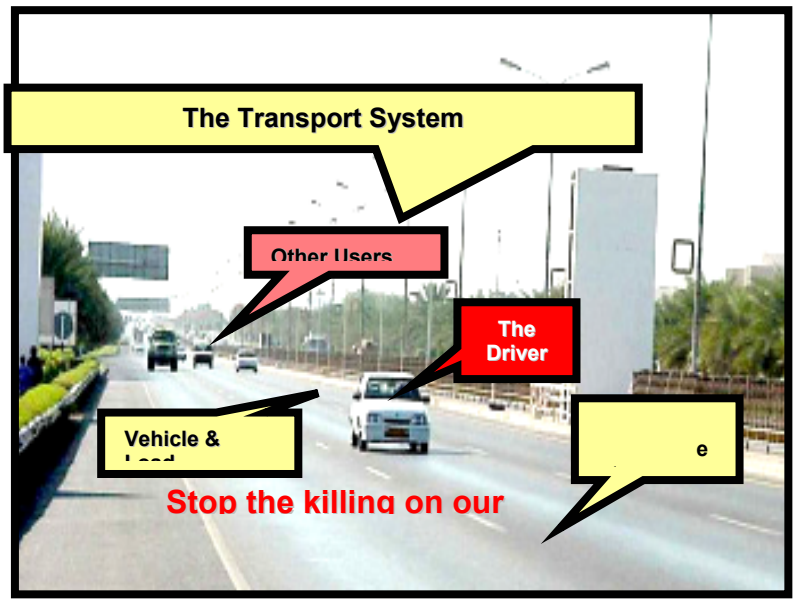
- Be committed to HSE (attend HSE meetings and carry out assigned HSE tasks)

■ Improve performance

- Keep records of incidents and reviews
- Look for ways of doing things better
- Be aware of recent fatalities/LTIs
- Make meaningful contributions and suggestions for improvement
- Track status of RAP (Remedial Action Plan)
- Adopt good house keeping practices
- Look for ways to minimize , re-use or recycle wastes that are generated
- Ensure that all waste streams in our operations are managed in accordance with the waste management procedure
- Discuss learning from incidents and use learning points to improve processes on site

Full implementation of HSE Management System means that people are doing what the Management System says they should be doing at all levels of the organization to prevent incidents.

It is pertinent to mention that this is the area where HSE is grossly been violated (operational Control violation) that gives rise to incident/accidents and therefore should be seriously adhered to at all times.



Know & Follow the Rules:

- **WEAR Seat-belts**
- **Stick to the SPEED LIMITS**
- **Drive Defensively NOT Aggressively**
- **Get your car serviced REGULARILY**
- **Look after your Children - STRAP THEM IN**
- **Don't get frustrated by others**
- **Don't drive if you are tired**
- **No GSM while driving**

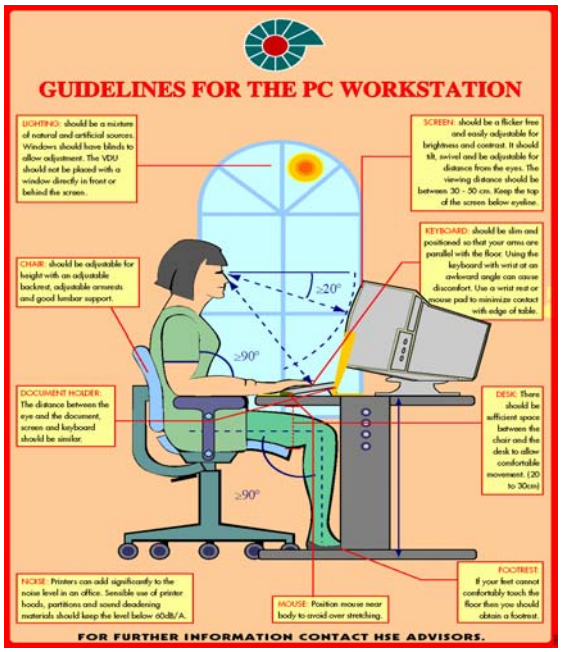
PDO Seat Belt Rule

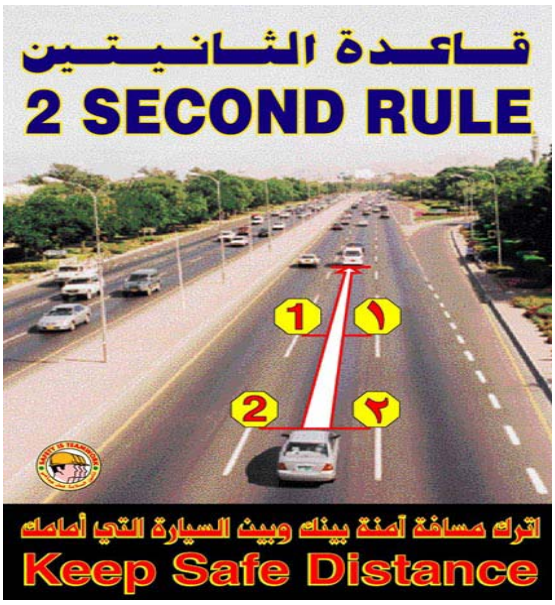
All passengers in every vehicle must wear their seat belt

This includes passengers in the rear seats, and your children.

WEAR IT ON EVERY TRIP!

Know Obey Safety

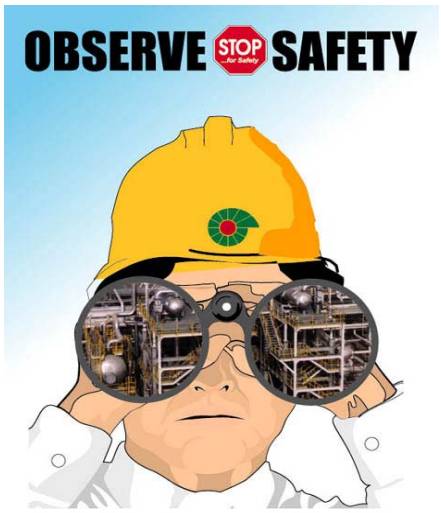




People identified as responsible for HSE critical activities must take Ownership

6.2.0 Monitoring methods:

- ❑ Systematic observation of the work and behaviors of staff and contractors to assess compliance with procedures and work instructions
- ❑ Regular environmental sampling and analysis
- ❑ Monitoring of Staff performance against personal HSE plans/Task & Targets
- ❑ Monitoring of HSE performance against plan e.g. LTIF, TRCF, Flaring, CFC Releases, oil spills etc



PROACTIVE MONITORING

Observing Safety for:-

- HSE-MS SAQ (Self Assessment Questionaire)
- Training and Competence
- STOP (Safety Observation Training programme)
- Audits
- successful emergency drills carried out
- Measuring the integrity of critical safeguarding systems
- Management inspections
- STOP scheme (cards, /Unsafe acts analysis)

6.2.2 PERFORMANCE INDICATORS

6.2.2a HSE Performance indicators

Reactive

- Fatalities
- LTI
- MTC
- FAC

Proactive

- STOP

6.2.2b PDO HSE-MS Performance Indicators

Reactive

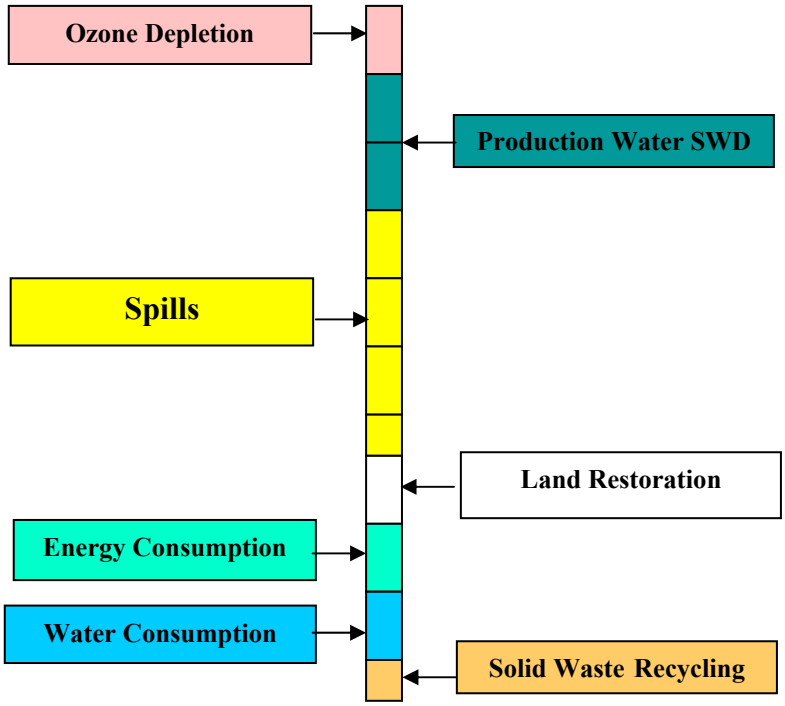
Safety:

- LTIF (Total lost Time incident Frequency)
- RCF (Total Recordable Case Frequency)
- FAR (Fatal Accident rate)

Environmental:

- Spills
- Leaks
- GWP (Global Warming potential)
- CEPI (Compulsory Environmental Performance Index)

CEPI elements



The Composite Environmental Performance Indicator (CEPI) is an Indicator of Environmental Performance

- **Developed in 1995/Revised in 2002**
- **Single index composed of 7 parameters**

Effective implementation of PDO's HSE management system requires both reactive and pro-active monitoring

To monitor the impact of our operations on the environment, we report environmental data in a Monthly Environmental Report and in an end of year report.

This Environmental data is used in PDO's Composite Environmental Performance Indicator (CEPI) and to compare the performance of the different units within PDO.

- Full implementation of the HSE Management System means that you and your team are doing what the management system states you should be doing, at all levels of the organization

HSE implementation and monitoring requirements:

- Provide clarity with respect to who is responsible for particular HSE critical activities.
- Promote **continual improvement** in HSE performance.
- Promote a positive Company culture with respect to HSE and 'ownership'.

"HSE is a built-in, not a bolt-on"

6.3.0 OSD ACTION TRACKING SYSTEM (OSD TRACK)

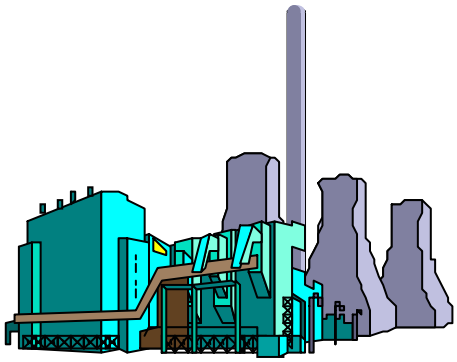
The three major operational areas (Bahja, Marmul or Nimr) use their own Action Tracking system. The OSD Action Tracking System is a computer based system used as part of the Area

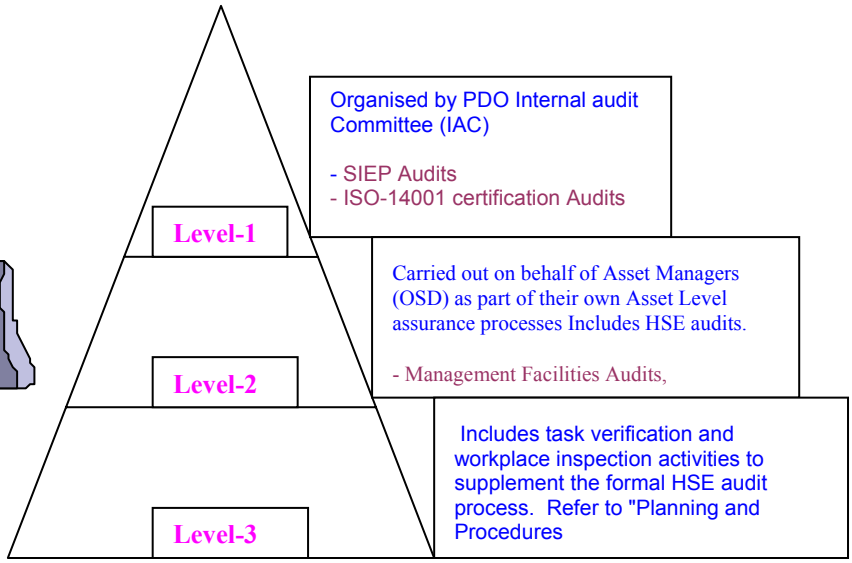
Applications' System developed for use by PDO asset Teams. "PDO Track" is used at corporate level and actions are not duplicated in "OSD Track"

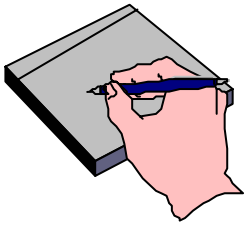
7.0 Audit

A process to check the Appropriateness and Effectiveness of the HSE Management System

PDO adopts a three-tiered approach to HSE Audits







- HSE **audits** provide management and external stakeholders with a systematic, independent way to assess the effectiveness and implementation of the HSE Management System.
- The audit process is the verification of the statements you make in the Letter of Representation.

"Audits are an integral part of our internal governance process, and the governance process of our shareholders"

PDO has a three-tiered approach to HSE **audit**:

Level 1: Includes HSE audits conducted on behalf of PDO's Internal Audit Committee (IAC) as part of the Integrated Audit Plan. This includes independent audits carried out by external bodies, such as SIEP and ISO 14001 certification audits.

Level 2: Includes HSE audits carried out on behalf of Asset Managers as part of their own Asset Level assurance processes eg. Internal EMS audits

Level 3: Includes task verification and workplace inspection activities to supplement the formal HSE audit process. Refer to "Planning and Procedures.

8.0 Review

Senior management review effectiveness and suitability of HSE performance, incidents and audit findings through the following ways;

- Area HSE-MS Self Assessment and publish result on the asset website
- Review HSE performance in Asset HSE meetings
- Review progress of annual HSE plan.
- Review progress of outstanding actions from tracking system.
- Audit findings
- Incident Review during incident review committee meetings

This is done in order to:

- Manage risks
- Reinforce efforts to continually improve HSE Performance

What went wrong??

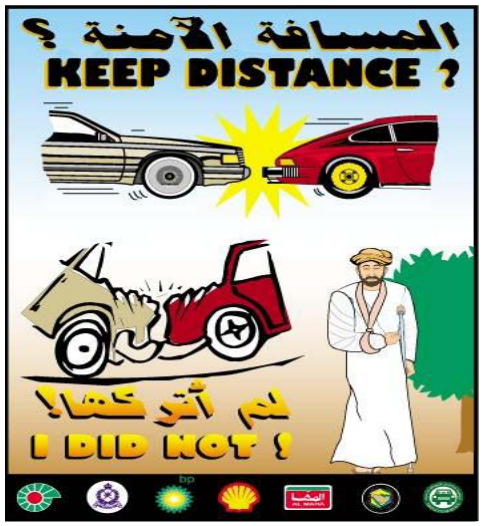
Common Findings

- Hazards not identified
- Lack of effective supervision
- Using the wrong tools
- Not following rules/procedures
- Poor communication (Language barrier?)
- Behaviour & attitude Lack of concentration
- Time pressure (hurry to finish the job)

Generic Underlying Causes of Incidents

- Lack of Effective **Supervision** (reason for ESSW)
- Not Following **Basic Rules** (Values, attitude & Behavior)
- Inadequate **Hazard Awareness**

This led to the retention of:
Compliance, Competence, Supervision and Road Safety as key themes for 2003



Consequence of non-compliance

WHY DO PEOPLE NOT COMPLY?

- Have YOU provided appropriate tools/training?
- Is it Interpersonal Issues?
- Is it Frustration with the Job?
- Is it Frustration with the Company?
- Is it to do with Welfare Conditions?
- Is it part of the person's nature to violate?

Ask yourself, the next time you witness negative Attitude, why it's happening, what are the likely Consequences

And

REPORT IT! It could save a life!

WHY DO YOU BREAK SAFETY RULES?

Have they got the right tools?

If not STOP (empowerment)

Do they know the rules?

Now you know the rules. No Excuse

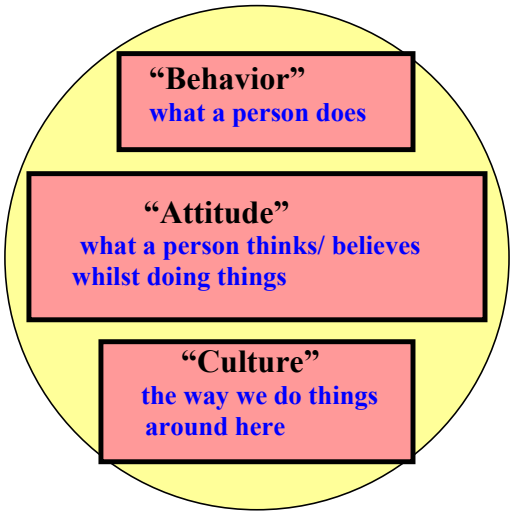
Do they understand the job?

If not do NOT do IT.

Are you unhappy?

Talk about it. Your life is in our Hand

Behavior, Attitude and Culture



They are all inter-linked and each has an impact on the other

9.0 LATERAL LEARNING

"We know what we learn".

There are two ways to learn;

1. Personnel experience.
2. Being told.

Why use YOUR seatbelt and not strap in YOUR CHILDREN?

Some actions are so simple to take: CHILDREN IN CARS

They are the most precious gifts you Will ever be given – look after them !

With respect to Safety the best (least harmful) is to learn from the observations or incidents of others.

Do not let it happen to you or see it happen in your area of control again. Learn from the mistakes of others

ZAULIYAH – 16

On the 4th August 2001 an uncontrolled Hydrocarbon release "Blow-out" occurred on Zauliyah-16 well. This event was the result of a chain of failures.

Fortunately no personnel were seriously injured in the event, however it did result in a major local environmental impact and the recovery operations were extensive and costly.

It is essential that events such as this are not repeated and therefore all Oil South Directorate staff and Contractors must be familiar with the details of the incident and the learning that have been gained.

King Pin Failure

Failure:

• Maintenance of third party equipment. King Pin not inspected by owner. Loose King Pin nuts not identified in Pre-Trip inspection.

Lateral Learning:

• Contracting company to become more involved in maintenance process of third party equipment – Mentorship of Community Aid Contractors.

• Identify 'critical components' of trailers and ensure they are included in Preventive maintenance schedule.

Roll-Over caused by negotiating a sharp bend on high speed

DON'T LET THIS HAPPEN TO YOU

What are the consequences of our at risk behaviour?

VIOLATION + ERROR = DISASTER.

STOP VIOALATION TO PREVENT DISASTER

If we do not stop at risk behaviours it could Affect you or someone you know?

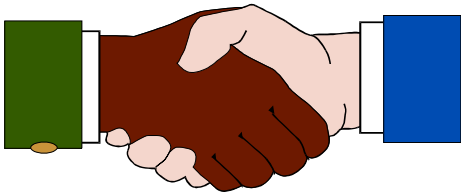
YOUR FAMILY NEEDS YOU AND REMENBER YOUR LOVED ONES…

10 OTHERS

10.1 Handover/Leave

All worksite personnel must have a positive hand-over on the worksite. The hand-over should include a written document covering all Operational and HSE issues and a clear plan ahead. Any deviation from this procedure requires step-out approval from the appropriate authorised supervisor.

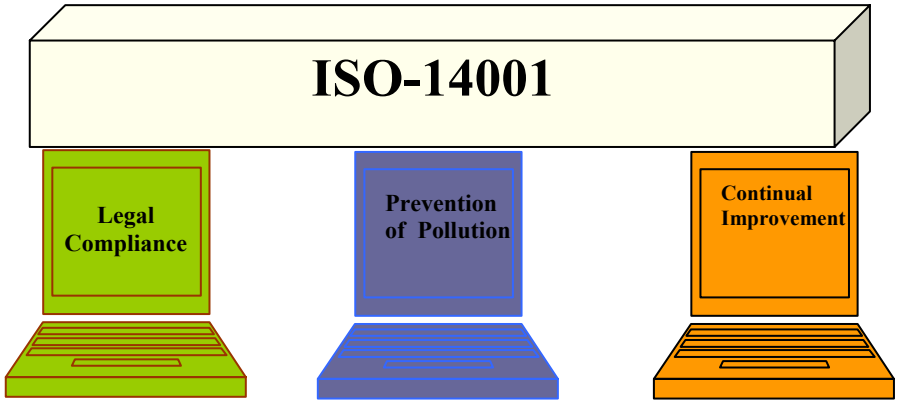
Similarly, departmental leave schedules must be kept up-to-date to ensure the correct resource levels are maintained at all time



10.2 ISO 14001 (Environmental Certification)

This is a standard that defines the way we should go about our work in order to manage any Environmental issues.

Certification to ISO-14001 demonstrates that we manage our environmental issues in a responsible, structured manner. To maintain certification we are audited every 6 months to verify our management system.



BENEFITS OF ISO-14001.

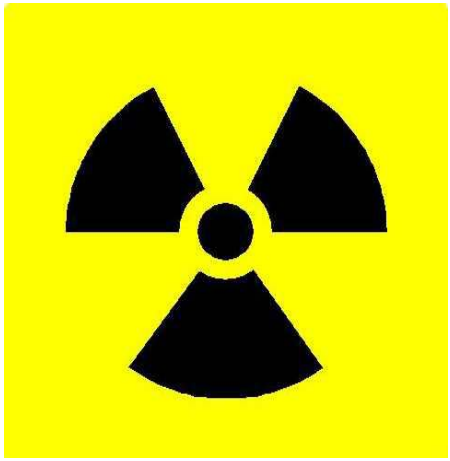
- **Licence to Operate (LTO)**
  To demonstrate our commitment to stakeholders
- **Excellence in Operation (EIO)-** To Control our environmental impacts
- **Growth-** To improve Operational performance
- **Transformation**- culture change for better

In 1999, PDO was the first major E&P Oil Company in the Middle East to achieve the ISO 14001 certification. In May 2002, PDO was re-certified for ISO-14001 environmental award for another three years to 2005.The re-certification makes it the most 'environmentally experienced E&P Company in the Region.

10.3 Environmental Impact Assessment (EIA)

Identifying and assessing environmental hazards and effects with a view to ensuring environmentally sound and sustainable development

10.4 Naturally Occurring Radioactive Materials (NORM)



NORM (Naturally Occurring Radioactive Material) is encountered at a number of reservoirs in PDO. The management of NORM and the steps that should be taken to effectively manage and control NORM are identified in Corporate specifications for NORM (SP-1070)

FINAL TIPS FOR SUPERVISORS AND EMPLOYEES.

Supervisors

- Do not allow work to start until HSE management systems are in place
- Advice workforce of potential hazards and their controls
- Check workforce wears appropriate PPE
- Hold regular HSE meetings, respond to suggestions and encourage a good attitude.
- Seek advice and assistance when necessary.
- Ensure workforce observes waste management
- Ensure vehicles are in good order and workforce observes traffic rules.
- Report and investigate all incidents in line with procedures.
- Check to see workforce is competent and follow procedures.
- Check facilities, tools and equipment meet agreed standards.
- Confirm through audits and reviews, that your contractors comply with their HSE plan
- After taking appropriate immediate action, advise management of unsafe plant or equipment, unsafe working conditions
- Provide waste storage containers

Employees:

- Do not start work without proper authorisation
- Ask questions to get clarifications if in doubt.
- Wear appropriate PPE and work in accordance with PPE requirements
- Obey safety signs
- Follow instructions and procedures
- Keep workplace clean and tidy
- Do not dump waste
- Segregate wastes in containers provided.
- Report unsafe conditions
- Report all near misses and incidents
- Use the right tools for job in the right way
- Obey road users regulations
- Do not use mobile phone while driving
- Stop work if you believe your activity is unsafe
- Correct the mistakes of others
- Do not cross safety barriers without proper authorisation.
- Familiarise yourself with the emergency response
- Comply with access control regulations

Glossary of Common HSE Terms and acronyms.

HSE: Health, Safety and Environment

HSE-MS: Health, Safety and Environment Management system:- The Company's structure, responsibilities, practices, procedures, processes and resources for implementing the Health Safety and Environmental management.

POLICY: Broad definition of PDO's expectations and requirement

CODE OF PRACTICE: Translates the policy into an outline of activities that shall be executed.

PROCEDURE: Defines what need to be done, who will do it and when it will be done

RECORDS: Any recorded item of information or evidence of actions completed

SPECIFICATION: Defines PDO's minimum requirements

GUIDELINES: Provides advice and guidance in interpreting the requirements of Codes of Practice, Procedures or Specifications.

HSE CASE: Is a facility or Operation specific demonstration of HSE-MS in action demonstrating that all major hazards in a facility have been identified, assessed and suitable HSE management arrangements are in place such that risks to people, assets and environment are as low as reasonably practicable

ACTIVITIES (TASKS): A set of patterns of operations which alone, or together with other tasks, may be used to achieve a goal

CRITICAL ACTIVITIES: Activities that have been identified by the Hazard and Effects Management Process as vital to ensure Asset Integrity prevent Incidents and /or mitigate adverse HSE effects.

HAZID: Hazard identification:- A structured database used to identify the major hazards which must be removed at an early stage in a green or brown field project or development plan.

HAZOP: A structured database used to identify hazards, effects and Operability problems relating to the process design and intended method of plant operation which must be removed or managed in the operation.

HAZARD: Anything that has potential to cause harm or risk to health, including injury, damage to property, products or the environment, production losses or increased liabilities

RISK: Likelihood that an agent will cause harm when exposed.
RISK=HAZARD x EXPOSURE

THREAT: A possible cause that will potentially release a hazard and produce an incident. Threat classes include damage caused by thermal (high temperature), chemical (corrosion), biological (bacteria), radiation (ultraviolet), kinetic (fatigue), electrical (high voltage), climatic condition (poor visibility), uncertainty (unknown) or human factor (competence)

HEMP: Hazard and effects Management Process: The structured hazard analysis methodology involving hazard identification, Assessment, Control and Recovery and comparison with screening and performance Criteria. To manage a criterion requires that all four steps must be in place and recorded.

HAZARD AND EFFECT REGISTER: A hazard Management communication Document that demonstrates that hazards have been identified, assessed, are being properly controlled and that recovery preparedness measures are in place in the event control is ever lost

THESIS: The Health, Environment and Safety Information System. It is rational database for structured development and maintenance of HSE cases.

JHA: Job Hazard Analysis:- Is the application of the hazards and effects management process at the task level, identifying and assessing the hazards of each element of the task and defining appropriate Controls and recovery measures

SD: Sustainable Development:- meeting the needs of the present without compromising the ability of future generations to meet their own needs.

MOPO: Manual of Permitted operations:- A structures documentation that defines the limits on activities during abnormal operating conditions when risk is increased.

HEALTH: State of moral, mental and physical well being which enables a person to face any crisis in life

ENVIRONMENT: The surroundings and condition in which company operates or which it may affect in cause of operation including human, air, water, land, natural resources, etc and their interrelation

ENVIRONMENTAL ASPECT: Elements of an organisation's activities, products or Services that can interact with the environment.

ENVIRONMENTAL IMPACT: Any change to the environment whether adverse or beneficial wholly or partially resulting from an organisation's activities, products or services.

CONSEQUENCE: An event or chain of events that results from the release of a hazard. eg. fire, explosion, death, damage

ESS: Enhanced Site Supervision

STOP: Safety Training Observation Program; Is a Du-Pont Safety Training Observation Program implored by PDO which is aimed at eliminating incidents and injuries by addressing the safe and unsafe behaviour of people in the workplace.

IMPACT SAFETY: PDO's new HSE performance management system; to report tracks and analyse incidents.

ACCIDENT: A release of hazard resulting to consequence.

INCIDENT: Unwanted deviation from the process (business process)

ALARP: As Low As Reasonably Practicable; To reduce risk to a level which is as low as reasonably practicable, balancing reduction in risk against the time, trouble, difficulty and cost of achieving it. This level represents the point objectively assessed, at which the time, trouble, difficulty and cost of further reduction measures is not worth the additional risk reduction obtained.

MHMS: Minimum Health Management Standard

HRA: Health Risks Assessment.

HFE: Human Factor Engineering

QRA: Qualitative Risk Assessment:- A structured approach to assessing the potential for accidents and expressing this potential numerically

EIA: Environmental Impact Assessment:- An instrument to identify and assess the potential environmental impacts of a proposed project, evaluate alternatives, and design appropriate mitigation, management and monitoring measures

HIA Health Impact Assessment

SIA: Social Impact Assessment

Exposure hours: Exposure Hours represent the total number of hours of employment for work as defined under section 2.1.3 of the guidelines, including overtime and training but excluding leave, sickness and other absences.

Fatality: A fatality is a classification of a death resulting from a Work Injury, or Occupational Illness, regardless of the time intervening between injury/illness and death. Note: the number quoted in this table does not include third party fatalities.

TRC: Total Recordable Case:- Are the sum of the number of fatalities, Permanent Total Disabilities, Permanent Partial Disabilities, Lost Workday Cases, Restricted work Cases, and Medical Treatment Cases. (All incidents resulting to injuries). Sometimes referred to as Total Recordable Cases.

LTI: Lost Time Injuries: - Are the sum of the number of fatalities, Permanent Total Disabilities, Permanent Partial Disabilities and Lost Workday Cases. In a single incident if 10

people receive lost time injuries, then it is accounted for as 10 LTIs and not 1.

LTIF: Lost Time Injury Frequency:- Is the number of Lost time injuries recorded per million man-hours (LTI per million man-hrs).

TRCF: Total Recordable Case Frequency:- The number of total reportable Cases per Million Exposure Hours during the period.

TROIF: The Total Reportable Occupational Illness Frequency is the sum of all occupational illnesses whether or not they have resulted in deaths, permanent total disabilities, permanent partial disabilities, lost workday cases, or restricted workday cases per million working hours during the reporting period.

JMR: Total number of kilometers driven per man-hour worked.

VIAR: The Vehicle Injury Accident Rate is the number of company and (sub) contractor employees who sustained an LTI as a consequence of road traffic accidents per 100 million km driven.

CEPI: Composite Environmental Performance Indicator.

GWP: Global Warming Potential. Measured in CO2:- Green-house gases such as CO2, CH4 through flaring and power generation cause global warming.

Refer to EP95-0100 HSE management Systems and EP 95-0300 Overview Hazards and Effects Management Process for more commonly used terms in HSE